

SOLICITATION/CONTRACT				REQUISITION NUMBER N66604-2343-00M9		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)		RATING DO		PAGE 1 OF 27	
BIDDER/OFFEROR TO COMPLETE BLOCKS 11, 13, 15, 21, 22, & 27. Control, POC Name: FPices, smithrd											
2. CONTRACT NO.		3. AWARD/EFFECTIVE DATE		4. SOLICITATION NUMBER N66604-03-R-0049		5. SOLICITATION TYPE SEALED BIDS (IFB) <input type="checkbox"/> NEGOTIATED (RFP) <input checked="" type="checkbox"/>		6. SOLICITATION ISSUE DATE			
7. ISSUED BY Commercial Acquisition Department, Building 11 Naval Undersea Warfare Center Division, Newport Code 591 , Simonpietri Drive Newport, RI 02841-1708 smithrd@npt.nuwc.navy.mil Rav Smith 401-832-5939				CODE N66604		8. THIS ACQUISITION IS <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> UNRESTRICTED <input checked="" type="checkbox"/> SET ASIDE: 100% FOR <input checked="" type="checkbox"/> SMALL BUSINESS </div> <div> <input type="checkbox"/> LABOR SURPLUS AREA CONCERNS <input type="checkbox"/> COMBINED SMALL BUSINESS & LABOR SURPLUS AREA CONCERNS <input type="checkbox"/> OTHER: </div> </div> <div style="display: flex; justify-content: space-between;"> <div>NAICS CODE 541330</div> <div>SIZE STANDARD \$23M</div> </div>		NO COLLECT CALLS			
9. SOLICITATION: SEALED OFFERS IN ORIGINAL AND 2 COPIES WILL BE RECEIVED BY THE ISSUING OFFICE IDENTIFIED IN BLOCK 7, UNTIL 2:00 P.M. (LOCAL TIME ZONE) ON _ . LATE OFFERS ARE SUBJECT TO LATE BID OR PROPOSAL PROVISIONS INCORPORATED HEREIN. ALL OFFERS ARE SUBJECT TO SUCH PROVISIONS, REPRESENTATIONS, CERTIFICATIONS AND SPECIFICATIONS AS ARE ATTACHED OR INCORPORATED BY REFERENCE. <u>SEE PROVISION L1 or L2 FOR SPECIFIC INSTRUCTIONS.</u>											
10. ITEMS TO BE PURCHASED (BRIEF DESCRIPTION) <input type="checkbox"/> SUPPLIES <input checked="" type="checkbox"/> SERVICES ELF LITERATURE EVALUATION											
11. IF OFFER IS ACCEPTED BY THE GOVERNMENT WITHIN _____ CALENDAR DAYS (60 CALENDAR DAYS UNLESS OFFEROR INSERTS A DIFFERENT PERIOD) FROM THE DATE SET FORTH IN BLOCK 9 ABOVE. THE CONTRACTOR AGREES TO HOLD ITS OFFERED PRICES FIRM FOR THE ITEMS SOLICITED HEREIN AND TO ACCEPT ANY RESULTANT CONTRACT SUBJECT TO THE TERMS AND CONDITIONS STATED HEREIN.						12. ADMINISTERED BY _____ CODE _____					
13. CONTRACTOR OFFEROR CODE _____ FACILITY CODE _____						14. PAYMENT WILL BE MADE BY _____ CODE _____					
TELEPHONE NO. _____ DUNS NO. _____						SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK: 14					
15. PROMPT PAY DISCOUNT						16. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION 10 U.S.C. 2304 (C) <input type="checkbox"/> 41 U.S.C. 253 (C) <input type="checkbox"/>					
17. ITEM NO.	18. SCHEDULE OF SUPPLIES/SERVICES					19. QUANTITY	20. UNIT	21. UNIT PRICE	22. AMOUNT		
	(SEE PAGE 2)										
DIST:											
23. ACCOUNTING AND APPROPRIATION DATA									24. TOTAL AWARD AMOUNT (FOR GOVT. USE ONLY)		
25. <input type="checkbox"/> CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 3 COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY CONTINUATION SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN.						26. <input type="checkbox"/> AWARD OF CONTRACT: YOUR OFFER ON SOLICITATION NUMBER SHOWN IN BLK 4 INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS: ALL ITEMS					
27. SIGNATURE OF OFFEROR/CONTRACTOR						28. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)					
NAME AND TITLE OF SIGNER (TYPE OR PRINT)				DATE SIGNED		NAME OF CONTRACTING OFFICER				DATE SIGNED	

NO RESPONSE FOR REASONS CHECKED			
	CANNOT COMPLY WITH SPECIFICATIONS		CANNOT MEET DELIVERY REQUIREMENT
	UNABLE TO IDENTIFY ITEM(S)		DO NOT REGULARLY MANUFACTURE OR SELL THE TYPE OF ITEMS INVOLVED
	OTHER (Specify)		
	WE DO	WE DO NOT, DESIRE TO BE RETAINED ON THE MAILING LIST FOR FUTURE PROCUREMENT OF THE TYPE OF ITEM(S) INVOLVED	
NAME AND ADDRESS OF FIRM (Include Zip Code)		SIGNATURE	
		TYPE OR PRINT NAME AND TITLE OF SIGNER	

FROM:

AFFIX
STAMP
HERE

TO: **Commercial Acquisition Department, Building 11
Naval Undersea Warfare Center Division, Newport
Code 591, Simonpietri Drive
Newport, RI 02841-1708**

SOLICITATION NO. N66604-03-R-0049
DATE AND LOCAL TIME 2003 SEP 02, 2:00 P.M.

SECTION B SUPPLIES OR SERVICES AND PRICES/COSTS**BX09 NEGATIVE TERM INCENTIVE**

This contract contains a **NEGATIVE TERM INCENTIVE**. Due to the scientific nature of the requirements, the vital nature of the ELF system to US Navy operations and the historic political sensitivity of the technology, the desired level of performance on this contract is "**Excellent**".

If performance under this contract is evaluated by the Government as anything less than "Very Good", the contract anticipated period of performance may be reduced.

The specifics of the **Negative Term Incentive** are located in the contract "Incentive Plan", Attachment # 5 and should be read in conjunction with the Statement of Work, Attachment #1, and the Performance Requirements Summary Table incorporated therein.

B10 SUPPLIES/SERVICES AND PRICES – FFP

<u>ITEM</u>	<u>SUPPLIES/SERVICES</u>	<u>QTY</u>	<u>UNIT</u>	<u>U/PRICE</u>	<u>AMOUNT</u>
0001	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 JAN 04 through 31 MAR 04.	1	LO	\$ _____	\$ _____
0002	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____
OPTION #1					
0003	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 APR 04 through 30 JUNE 04.	1	LO	\$ _____	\$ _____
0004	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____
OPTION #2					
0005	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 JULY 04 through 30 SEPT 04.	1	LO	\$ _____	\$ _____
0006	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____
OPTION #3					
0007	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 OCT 04 through 31 DEC 04.	1	LO	\$ _____	\$ _____
0008	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

OPTION #4

0009	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 JAN 2005 through 31 MAR 2005.	1	LO	\$ _____	\$ _____
------	--	---	----	----------	----------

0010	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____
------	---	---	----	----------	----------

OPTION #5

0011	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 APR 2005 through 30 JUN 2005.	1	LO	\$ _____	\$ _____
------	--	---	----	----------	----------

0012	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____
------	---	---	----	----------	----------

OPTION #6

0013	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 JULY 2005 through 30 SEP 2005.	1	LO	\$ _____	\$ _____
------	---	---	----	----------	----------

0014	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____
------	---	---	----	----------	----------

OPTION #7

0015	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 OCT 2005 through 31 DEC 2005.	1	LO	\$ _____	\$ _____
------	--	---	----	----------	----------

0016	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____
------	---	---	----	----------	----------

OPTION #8

0017	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 JAN 06 through 31 MARCH 06.	1	LO	\$ _____	\$ _____
------	--	---	----	----------	----------

0018	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____
------	---	---	----	----------	----------

OPTION #9

0019	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 APR 06 through 30 JUNE 06.	1	LO	\$ _____	\$ _____
------	---	---	----	----------	----------

0020	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____
------	---	---	----	----------	----------

OPTION #10

0021	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 JULY 06 through 30 SEPT 06.	1	LO	\$ _____	\$ _____
0022	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

OPTION #11

0023	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 OCT 06 through 31 DEC 06.	1	LO	\$ _____	\$ _____
0024	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

OPTION #12

0025	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 JAN 06 through 31 MARCH 06.	1	LO	\$ _____	\$ _____
0026	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

OPTION #13

0027	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 APR 06 through 30 JUN 06.	1	LO	\$ _____	\$ _____
0028	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

OPTION #14

0029	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 JULY 05 through 30 SEPT 06.	1	LO	\$ _____	\$ _____
0030	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

OPTION #15

0031	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 OCT 06 through 31 DEC 06.	1	LO	\$ _____	\$ _____
0032	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

OPTION #16

0033	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 JAN 07 through 31 MAR 07.	1	LO	\$ _____	\$ _____
0034	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

OPTION #17

0035	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 APR 07 through 30 JUN 07.	1	LO	\$ _____	\$ _____
0036	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

OPTION #18

0037	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 1 JULY 07 Through 30 SEPT 07.	1	LO	\$ _____	\$ _____
0038	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

OPTION #19

0039	Evaluation services per the Statement of Work (SOW) Attachment #1, for literature review services from 30 SEPT 07 through 31 DEC 07	1	LO	\$ _____	\$ _____
0040	Data per Exhibit "A", Contract Data Requirements List (CDRL) DD Form 1423	1	LO	\$ _____	\$ _____

[Total contract value if all options are exercised: \$ _____]

Offerors shall complete the unit price and amount blocks.

B36 OFFERS FOR LESS THAN THE TOTAL QUANTITY ARE UNACCEPTABLE

Offers for less than the total quantity for all items specified are UNACCEPTABLE.

B42 OPTIONS

The additional items of supplies or services available under the Options clause of this contract, the applicable Line Item, and the exercise dates are specified below:

CLIN	EXERCISE DATE
0003-0004	From contract award date through 30 JULY 2004
0005-0006	From contract award date through 30 SEPT 2004
0007-0008	From contract award date through 31 DEC 2004
0009-0010	From contract award date through 31 MAR 2005
0011-0012	From contract award date through 30 JUL 2005
0013-0014	From contract award date through 30 SEPT 2005
0015-0016	From contract award date through 31 DEC 2005
0017-0018	From contract award date through 31 MAR 2006
0019-0020	From contract award date through 30 JUL 2006
0021-0022	From contract award date through 30 SEPT 2006
0023-0024	From contract award date through 31 DEC 2006
0025-0026	From contract award date through 31 MAR 2007
0027-0028	From contract award date through 30 JUL 2007
0029-0030	From contract award date through 30 SEPT 2007
0031-0032	From contract award date through 31 DEC 2007
0033-0034	From contract award date through 31 MAR 2008
0035-0036	From contract award date through 30 JUL 2008
0037-0038	From contract award date through 30 SEPT 2008
0039-0040	From contract award date through 31 DEC 2008

SECTION C DESCRIPTION / SPECIFICATIONS/WORK STATEMENT**C11 STATEMENT OF WORK**

SERVICES are to be performed in accordance with the Statement of Work, Attachment #1.

C21 PERSONNEL QUALIFICATIONS

(a) Qualifications. The Contractor shall provide personnel having the minimum levels of professional/technical experience and education specified for each labor category in Attachment #2, Personnel Qualifications Sheets. Specialized experience shall have been obtained in the areas indicated by the labor qualifications and the Statement of Work. In addition, Key Personnel are subject to the terms of the clause entitled, Key Personnel.

(b) Workmanship. Unless otherwise specifically provided in this contract, the quality of all services rendered hereunder shall conform to the highest standards in the relevant profession, trade or field of endeavor. All services shall be rendered by individuals fully qualified in the relevant profession, trade or field, and holding any licenses required by law.

(c) Job Functions. The functions to be performed by personnel, both Key and Non-Key shall reasonably correspond to the title of the Labor Category. For example, design of electrical components may not be performed by an individual listed in the Typist labor category, nor may typist functions be performed by an individual listed in the Electrical Engineer labor category.

SECTION D PACKAGING AND MARKING**D10 MARKING OF REPORTS (SEP 2001)**

Some of the data deliverables under this contract may require additional markings. If this clause is cited in Block 16 of the DD Form 1423, provide the following markings prominently on the cover of the report:

Contractor Name and Business Address
Contract Number (and order number when applicable)
Contract (order, if applicable) dollar amount
Whether the contract was competitively or non-competitively awarded
Sponsor (name, activity, office code, and location). Orders, if applicable, will identify the sponsor.

D20 DELIVERY OF DATA (SEP 2001)

(a) Data furnished hereunder shall be adequately packaged to assure safe delivery at destination.

(b) Transmittal of classified information by mail shall be in accordance with the National Industrial Security Program Operating Manual (NISPOM) for Safeguarding Classified Information (DOD 5220.22-M).

(c) All copies of CDRL items under this contract, regardless of distribution, shall be marked on the report cover with the following information:

Naval Undersea Warfare Center Division, Newport
Contract, Order, and ELIN Numbers
Report Title
Date of Report
Contractor Name (division which generated the report)

D24 PROHIBITED PACKING MATERIALS

The use of asbestos, excelsior, newspaper or shredded paper (all types including waxed paper, computer paper and similar hygroscopic or non-neutral material) is prohibited. In addition, loose fill polystyrene is prohibited for shipboard use.

SECTION E INSPECTION AND ACCEPTANCE

The following contract clauses are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
52.246-4	INSPECTION OF SERVICES - FIXED-PRICE	(AUG 1996)

SECTION F DELIVERIES OR PERFORMANCE

The following contract clauses are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
52.242-15	STOP-WORK ORDER	(AUG 1989)

F18 DELIVERY AT DESTINATION (AUG 1999)

The articles to be furnished hereunder shall be delivered in accordance with the clause entitled, F.O.B. Destination (FAR 52.247-34), to the following address:

Supply Officer
Naval Undersea Warfare Center, Division Newport
Naval Station Newport, Bldg. 47
47 Chandler Street
Newport, RI 02841-1708

F21 COMPLETION DATE

Services to be furnished hereunder shall be performed and completed within 120 days after placement of contract or within 120 days of placement of last option.

F30X PLACE OF PERFORMANCE (SEP 2001)

- (a) Work will be performed at the Contractor's facility or other locations, as required by the statement of work.
- (b) Sea travel and work aboard Government warships or vessels may be required. The Contractor must obtain boarding authorization from the Commanding Officer prior to boarding any U.S. Naval warship or vessel.
- (c) The Contractor is responsible for making all needed arrangements for its personnel. This includes but is not limited to travel reservations, medical examinations, immunization, passports, visas, and security clearances.
- (d) Travel outside the continental United States may be required; see Section I for clauses relating to overseas travel.

SECTION G CONTRACT ADMINISTRATION DATA

G10 CONTRACTUAL AUTHORITY AND COMMUNICATIONS (SEP 2001)

- (a) Except as specified in subparagraph (b) below, no order, statement, or conduct of any Government personnel who visit the Contractor's facilities or in any other manner communicates with Contractor personnel during the performance of this contract shall constitute a change under the Changes clause of this contract.
- (b) The Contractor shall not comply with any order, direction or request of Government personnel unless it is issued in writing and signed by the Contracting Officer, or is pursuant to specific authority otherwise included as a part of this contract.
- (c) The Contracting Officer is the only person authorized to approve changes in any of the requirements of this contract and, notwithstanding provisions contained elsewhere in this contract, the said authority remains solely the Contracting Officer's. In the event the contractor effects any change at the direction of any person other than the

Contracting Officer, the change will be considered to have been made without authority and no adjustment will be made in the contract price to cover any increase in charges incurred as a result thereof.

(d) The Government reserves the right to administratively transfer authority over this contract from the individual named below to another Contracting Officer at any time.

(e) (For Indefinite Delivery contracts only) Ordering Officers are Contracting Officers of the Naval Undersea Warfare Center Division, Newport. However, their authority extends only to the order that they sign.

(f) The address and telephone number of the Contracting Officer is:

Name: RAY SMITH

Address: Commercial Acquisition Department, Building 11
Naval Undersea Warfare Center Division, Newport
Code 591
Simonpietri Drive
Newport, RI 02841-1708

Telephone: Commercial: 401-832-5939; DSN: 920-5939

Email: smithrd@npt.nuwc.navy.mil

G11 CONTRACT ADMINISTRATION FUNCTIONS (SERVICES)

(a) The cognizant Administrative Contracting Office for this contract is identified in Block 12 on page one of this contract.

(b) **PCO RETAINED FUNCTIONS**. The Procuring Contracting Officer (PCO) retains the administrative functions described in FAR 42.302(a) and listed below. These functions will be accomplished as set forth in the Contract Administration Plan or Contract Administration Master Plan, as applicable, Attachment #4.

- (3) Conduct post-award orientation conferences.
- (40) Perform engineering surveillance to assess compliance with contractual terms for schedule, cost, and technical performance in the areas of design, development, and production.
- (44) Perform engineering analyses of contractor cost proposals.
- (45) Review and analyze contractor-proposed engineering and design studies and submit comments and recommendations to the contracting office, as required.
- (46) Review engineering change proposals for proper classification, and when required, for need, technical adequacy of design, producibility, and impact on quality, reliability, schedule, and cost; submit comments to the contracting office.
- (47) Assist in evaluating and make recommendations for acceptance or rejection of waivers and deviations.

(c) **ACO DELEGATED FUNCTIONS**. The Administrative Contracting Officer (ACO) is delegated the following functions:

- (1) All other functions of FAR 42.302(a) *except* (3), (40), (44), (45), (46), and (47).
- (2) The function of FAR 42.302(b)(4); negotiating and executing supplemental agreements providing for the deobligation of unexpended dollar balances considered excess to known contract requirements, and for the crediting of any overpayments made to the contractor. Attach a copy of the modification to the DD 1594 and forward to the PCO address (Attn: Code 5912 -- CLOSEOUT)
- (3) The function of FAR 42.302(b)(6).

(d) If the ACO identifies a contract administration problem, the remedy for which is not covered by the above, the ACO shall request the PCO to delegate additional functions as necessary. The PCO may delegate authority by letter.

G14 CONTRACTOR'S SENIOR TECHNICAL REPRESENTATIVE (APR 2003)

Fill in the information required below. The contractor's senior technical representative, point of contact for performance under this contract is:

Name: _____

Title: _____

Mailing Address: _____

E-mail Address: _____

Telephone: _____ FAX: _____

G15 NOTE TO PAYMENT OFFICE - ADDRESS OF PAYEE

The Paying Office will mail payments to:

*

* Offerors should complete the above if they wish payments to be sent to an address other than that shown on the contract face. Invoices should also specifically inform the paying office of this address.

G16 NOTE TO PAYMENT OFFICE - PAYMENT BY ACRN (MAY 2001)

In the event the contractor does not identify the specific ACRN (or the related SLIN) being invoiced, the paying office is directed to pay the invoice by assigning the ACRN on a first-in first-out basis. For example, pay from ACRN A1 until fully expended, followed by ACRN A2 until fully expended, followed by ACRN A3 until fully expended, etc. If necessary, the paying office should assign the appropriate SLIN.

SECTION H SPECIAL CONTRACT REQUIREMENTS**H61 GOVERNMENT FURNISHED PROPERTY (GFP) (SEP 2001)**

(a) The Government shall furnish Government property to the Contractor for use in connection with this contract.

(1) Government Furnished Equipment (GFE), Government Furnished Material (GFM) and Government facilities shall be made available for contractor's use as identified in Attachment 6, entitled, Government Property Made Available. The property shall be made available, free of expense to the Contractor, in the quantities and at the times specified at the following location: ____.

(2) Government Furnished Information (GFI) shall be provided as identified in the Statement of Work and specifications. Unless specified otherwise, GFI will be furnished within 30 days after contract award.

(b) Only the identified items, in the quantity shown, will be furnished by the Government; however, additional Government property may be made available for use on individual orders. All other material required for the performance of this contract shall be furnished by the Contractor. GFP furnished under this contract is for use exclusively under this contract unless specified otherwise in writing by the Contracting Officer.

(c) All Government Property furnished under this contract shall be returned to NUWCDIVNPT at the completion of the contract unless otherwise specified. The Contractor shall immediately advise the Contracting Officer, in writing, of any property lost, damaged, or transferred out of the Contractor's possession.

SECTION I CONTRACT CLAUSES

The following contract clauses are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
52.202-1	DEFINITIONS	(DEC 2001)
52.203-3	GRATUITIES	(APR 1984)
52.203-5	COVENANT AGAINST CONTINGENT FEES	(APR 1984)
52.203-6	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT	(JUL 1995)
52.203-7	ANTI-KICKBACK PROCEDURES	(JUL 1995)
52.203-8	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY	(JAN 1997)
52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	(JAN 1997)
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	(JUN 1997)
252.203-7001	PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT-RELATED FELONIES	(MAR 1999)
52.204-4	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER	(AUG 2000)
252.204-7003	CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT	(APR 1992)
252.204-7004	REQUIRED CENTRAL CONTRACTOR REGISTRATION	(MAR 2000)
252.205-7000	PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS	(DEC 1991)
52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT	(JUL 1995)
252.209-7000	ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ON-SITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY	(NOV 1995)
252.209-7004	SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY	(MAR 1998)
52.211-15	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS	(SEP 1990)
52.215-2	AUDIT AND RECORDS - NEGOTIATION	(JUN 1999)
52.215-8	ORDER OF PRECEDENCE -- UNIFORM CONTRACT FORMAT	(OCT 1997)
52.217-7	OPTION FOR INCREASED QUANTITY - SEPARATELY PRICED LINE ITEM fill-in: within <u>as identified in B42</u> .	(MAR 1989)
52.219-6	NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE	(JUL 1996)
52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS	(OCT 2000)
52.222-3	CONVICT LABOR	(AUG 1996)
52.222-21	PROHIBITION OF SEGREGATED FACILITIES	(FEB 1999)
52.222-26	EQUAL OPPORTUNITY	(FEB 1999)
52.222-35	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	(DEC 2001)
52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES	(JUN 1998)
52.222-37	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	(DEC 2001)
52.223-6	DRUG-FREE WORKPLACE	(MAY 2001)
252.225-7012	PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES	(FEB 2003)
252.226-7001	UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES--DOD CONTRACTS	(SEP 2001)
52.227-1	AUTHORIZATION AND CONSENT	(JUL 1995)
52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT	(AUG 1996)

252.227-7025	LIMITATIONS ON THE USE OR DISCLOSURE OF GOVERNMENT-FURNISHED INFORMATION MARKED WITH RESTRICTIVE LEGENDS	(JUN 1995)
52.229-3	FEDERAL, STATE, AND LOCAL TAXES	(JAN 1991)
52.232-1	PAYMENTS	(APR 1984)
52.232-8	DISCOUNTS FOR PROMPT PAYMENT	(FEB 2002)
52.232-11	EXTRAS	(APR 1984)
52.232-17	INTEREST	(JUN 1996)
52.232-23	ASSIGNMENT OF CLAIMS - ALT I (APR 1984)	(JAN 1986)
52.232-25	PROMPT PAYMENT	(FEB 2002)
52.232-33	PAYMENT BY ELECTRONIC FUNDS TRANSFER – CENTRAL CONTRACTOR REGISTRATION	(MAY 1999)
252.232-7003	ELECTRONIC SUBMISSION OF PAYMENT REQUESTS	(MAR 2003)
52.233-3	PROTEST AFTER AWARD	(AUG 1996)
52.242-13	BANKRUPTCY	(JUL 1995)
252.242-7000	POSTAWARD CONFERENCE	(DEC 1991)
52.243-1	CHANGES - FIXED PRICE - ALT I (APR 1984)	(AUG 1987)
252.243-7001	PRICING OF CONTRACT MODIFICATIONS	(DEC 1991)
252.243-7002	REQUESTS FOR EQUITABLE ADJUSTMENT	(MAR 1998)
52.244-6	SUBCONTRACTS FOR COMMERCIAL ITEMS	(MAY 2002)
252.244-7000	SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS	(MAR 2000)
52.245-4	GOVERNMENT-FURNISHED PROPERTY (SHORT FORM)	(APR 1984)
252.247-7023	TRANSPORTATION OF SUPPLIES BY SEA	(MAY 2002)
252.247-7024	NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA	(MAR 2000)
52.248-1	VALUE ENGINEERING	(FEB 2000)
52.249-2	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE)	(SEP 1996)
52.249-8	DEFAULT (FIXED-PRICE SUPPLY AND SERVICE)	(APR 1984)
52.253-1	COMPUTER GENERATED FORMS	(JAN 1991)

I32-900 SUBMISSION OF INVOICES (FIXED PRICE) (NAPS 5252.232-9000) (JUL 1992)

- (a) "Invoice" as used in this clause does not include contractor's requests for progress payments.
- (b) The contractor shall submit original invoices with copies to the address identified in the solicitation/contract award form (SF26 - Block 10; SF33 - Block 23; SF1447 - Block 14), unless orders are applicable, in which case invoices will be segregated by individual order and submitted to the address specified in the order (DD1155 - Block 13 or SF26 - Block 10).
- (c) The use of copies of the Material Inspection and Receiving Report (MIRR), DD Form 250, as an invoice is encouraged. DFARS Appendix F-306 provides instructions for such use. Copies of the MIRR used as an invoice are in addition to the standard distribution stated in DFARS F-401.
- (d) In addition to the requirements of the Prompt Payment clause of this contract, the contractor shall cite on each invoice the contract line item number (CLIN); the contract subline item number (SLIN), if applicable; the accounting classification reference number (ACRN) as identified on the financial accounting data sheets, and the payment terms.
- (e) The contractor shall prepare:
- ___ a separate invoice for each activity designated to receive the supplies or services.
 - ___ a consolidated invoice covering all shipments delivered under an individual order.
 - ___ either of the above.

(f) If acceptance is at origin, the contractor shall submit the MIRR or other acceptance verification directly to the designated payment office. If acceptance is at destination, the consignee will forward acceptance verification to the designated payment office.

I52-2 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es): <http://www.arnet.gov/far/>

SECTION J LIST OF ATTACHMENTS

J10 LIST OF ATTACHMENTS

<u>EXHIBIT</u>	<u>TITLE</u>	<u>PAGES</u>
"A"	DD Form 1423, Contract Data Requirements List	2
<u>ATTACHMENT</u>		
1	Statement of Work	8
2	SOW Ref. a. document: ELF BIOEFFECTS LITERATURE EVALUATION AND ASSESSMENT REFERENCE INFORMATION. Sections 1 – 6	52
3	Personnel Qualifications Sheets	2
4	Personnel Data Form	1
5	Government Property Made Available	1
6	Incentive Plan	5

SECTION K REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF OFFERORS OR RESPONDENTS

The following solicitation provisions are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
52.203-11	CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	(APR 1991)
252.225-7031	SECONDARY ARAB BOYCOTT OF ISRAEL	(APR 2003)

K03-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (FAR 52.203-2) (APR 1985)

(a) The offeror certifies that-

- (1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods or factors used to calculate the prices offered;
- (2) The prices in the offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and
- (3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory--

- (1) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or
- (2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above _____

[insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization];

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of this disclosure.

K04-3 TAXPAYER IDENTIFICATION (FAR 52.204-3) (OCT 1998)

(a) Definitions.

"Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

- ☐ TIN: _____
- ☐ TIN has been applied for.
- ☐ TIN is not required because:
- ☐ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;
- ☐ Offeror is an agency or instrumentality of a foreign government;
- ☐ Offeror is an agency or instrumentality of the Federal Government;

(e) Type of organization.

- ☐ Sole proprietorship;
- ☐ Partnership;
- ☐ Corporate entity (not tax-exempt);
- ☐ Corporate entity (tax-exempt);
- ☐ Government entity (Federal, State, or local);
- ☐ Foreign government;
- ☐ International organization per 26 CFR 1.6049-4;
- ☐ Other _____.

(f) Common Parent.

- ☐ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.
- ☐ Name and TIN of common parent:

Name: _____

TIN: _____

**K04-5 WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (FAR 52.204-5)
(MAY 1999)**

(a) *Definition.* "Women-owned business concern," as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) *Representation.* [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of this solicitation.] The offeror represents that it ☐ is, ☐ is not a women-owned business concern.

K09-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (FAR 52.209-5) (DEC 2001)

(a) (1) The Offeror certifies, to the best of its knowledge and belief, that--

(i) The Offeror and/or any of its Principals--

(A) Are ☐, are not ☐, presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have ☐, have not ☐, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are ☐, are not ☐, presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(D) of this provision.

(ii) The Offeror has ☐, has not ☐, within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

K09-001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (DFARS 252.209-7001) (MAR 1998)(a) Definitions. As used in this provision--

(1) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means--

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities.

Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares", "street names", or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm such as director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) Prohibition on award. In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) Disclosure. If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclose such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include--

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each Government.

K19-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (FAR 52.219-1) (APR 2002) – ALT I (APR 2002)

(a) (1) The North American Industry Classification System (NAICS) code for this acquisition is set forth in block 8 of the SF 1447, Page 1 of this solicitation.

(2) The small business size standard is set forth in block 8 of the SF 1447, Page 1 of this solicitation.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations.

(1) The offeror represents as part of its offer that it ☐ is, ☐ is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ☐ is, ☐ is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ☐ is, ☐ is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ☐ is, ☐ is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it ☐ is, ☐ is not a service-disabled veteran-owned small business concern.

(6) (Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, as part of its offer, that –

(i) It ☐ is, ☐ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office of ownership, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR Part 126; and

(ii) It ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR Part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) [Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.] The offeror shall check the category in which its ownership falls:

☐ Black American.

☐ Hispanic American.

☐ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

☐ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

☐ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

☐ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision--

“Service-disabled veteran-owned small business concern” -

(1) Means a small business concern -

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

"Veteran-owned small business concern" means a small business concern -

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern--

(1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to sections 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall --

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

K22-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FAR 52.222-22) (FEB 1999)

The offeror represents that-

(a) It ☐ has, ☐ has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) It ☐ has, ☐ has not, filed all required compliance reports, and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

K22-25 AFFIRMATIVE ACTION COMPLIANCE (FAR 52.222-25) (APR 1984)

The offeror represents that -

(a) It ☐ has developed and has on file, ☐ has not developed and does not have on file, at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2), or

(b) It ☐ has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

K22-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

K47-022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (DFARS 252.247-7022) (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term "supplies" is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it--

☐ Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

☐ Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

SECTION L INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS OR QUOTERS

The following solicitation provisions are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
52.204-6	DATA UNIVERSAL NUMBERING SYSTEM (DUNS)	(JUN 1999)
252.204-7001	COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING	(AUG 1999)
52.211-14	NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE check one: _____ DX or <u>X</u> _____ DO rated order	(SEP 1990)
52.214-35	SUBMISSION OF OFFERS IN U. S. CURRENCY	(APR 1991)
52.215-16	FACILITIES CAPITAL COST OF MONEY	(OCT 1997)
52.222-24	PREAWARD ON-SITE EQUAL OPPORTUNITY COMPLIANCE EVALUATION	(FEB 1999)

L3 PRE-AWARD POINT OF CONTACT

The Contract Negotiator assists the Contracting Officer, and is responsible for negotiation of the contract during the pre-award phase. The Contract Negotiator is the preferred point of contact for questions and problem reporting, and should be contacted first for all pre-award matters. The contract negotiator is identified in Block 7 of the SF 1447.

L4 FACSIMILE PROPOSALS AND BIDS NOT AUTHORIZED

Facsimile proposals (bids) are not authorized for this acquisition. "Facsimile proposal (bid)," as used in this solicitation, means a proposal (bid), modification of a proposal (bid), or withdrawal of a proposal (bid) that is transmitted to and received by the Government via electronic equipment that communicates and reproduces both printed and handwritten material.

L5 REQUIREMENTS FOR OFFEROR COMPLETION (APR 2002)

Certain sections of this solicitation require the offeror to provide information. The list that follows indicates the clauses, provisions and attachments that require offeror completion and that may be included in this solicitation. Offerors should review the solicitation carefully and insert relevant data wherever required.

Section A - Forms. SF1447 (Solicitation/Contract). Blocks 11, 13, 15, 21, 22, 27 and the back of the form.

Section B - Supplies/Services and Prices. Clauses B10 through B20

Section F - Deliveries or Performance. Clauses F10 through F17, F40, F11-8, F11-9, F47-33, and F47-60

Section G - Contract Administration Data. Clauses G12, G14, and G15

Section H - Special Contract Requirements. Clause H51

Section I - Contract Clauses. Clauses I08-000, I09-1, I16-2, I16-3, I16-001, I22-48, I23-3, I23-9A, and I23-001

Section K - Representations, Certifications, and Other Statements of Offeror.

All required certifications and representations

Section L - Instructions, Conditions, and Notices to Offerors. Clauses L10, L43, and L14-21A

Section M - Evaluation Factors for Award. Clauses M20, M21, M47-51, M47-51A, M47-51B, and M47-51C

Section J - Attachments. Numbers 2, 8, 10, and 12

L9 AVAILABILITY OF REQUIRED FORMS AND PUBLICATIONS

(a) Offerors will need a variety of required Government forms and publications in submitting offers and performing the contract. These are available as specified below; payment may be necessary.

(1) Forms listed in FAR Section 53 (Standard Forms and Optional Forms) are available per FAR 53.107(b) from the Superintendent of Documents, GPO, Washington, DC 20402. This is the best source of all Federal, non-DoD publications and documents.

(2) Forms listed in DFARS Section 53 (DD Forms) are available from the same activity as specifications (See Section L, FAR 52.211-2). This is the best source of DoD publications and documents.

(3) Forms may also be available through the offeror's cognizant Administrative Contracting Officer.

(4) In addition to Government sources, items may be available from public libraries and commercial sources.

(b) All NUWC Division, Newport specific forms are attached; see Section J.

L30X PROPOSAL SUBMISSION - GENERAL REQUIREMENTS (MAR 2002)

(a) Offerors must respond to all requirements of the solicitation document. Submit proposals to the address indicated in block 7 of the SF1447.

(b) Proposal Format. This section specifies the format that offerors shall use in submitting proposals in response to this Request For Proposal (RFP). The intent is to provide a certain degree of uniformity in the format of the proposals to ensure a complete, fair and efficient evaluation.

(1) Partition. Offerors are required to submit their proposals in separate parts as follows:

- (i) Letter of Transmittal, if any
- (ii) Original signed solicitation document with all the required fill-ins completed plus 2 copies ***Do not alter, disassemble, or punch holes in the solicitation document except to remove attached forms that must be completed and included in the proposal.***
- (iii) Volume I - Technical Proposal - Include all data and information required for evaluation as set forth in the provision entitled, "Technical Proposal". Exclude any reference to the pricing aspects of the offer.
- (iv) Cost/Price Proposal – Insert fix price for each CLIN in clause
- (v) Page Limits and Copies.

<u>Volume</u>	<u>Maximum Number of Pages</u>	<u>Copies Required</u>
Volume I - Technical	<u>100 PAGES MAXIMUM</u> (Including Personnel Qualification Sheets, Personnel Data Forms, Past Performance Data, or any other provided information)	Original plus 3 copies, for a total of four (4) submissions.

Important Note: Offerors shall not include CLASSIFIED material in the volumes.

(2) General Format and Markings.

- (i) The text of the proposal shall be printed single sided on 8 1/2 by 11 inch paper. Pages shall be consecutively numbered. Type size shall be 10 point "Times" font or equivalent, uncompressed and unreduced. Text shall be single-spaced with margins of at least one inch on all sides. Foldout pages up to 11 x 17 inches may be used for diagrams, charts or graphic material with type size(s) left to the discretion of the offeror.
- (ii) Provide a Table of Contents in sufficient detail so that the important proposal elements can be easily located. The use of tabs and dividers is encouraged. The proposal Title Page will include all information required in (iii) below plus identification of copies bearing original authorizing signatures.
- (iii) The Technical volume shall be in standard three-ring loose-leaf binders that can be easily opened and closed. Binders shall be marked as follows:
 - Proposal Title
 - Volume number
 - Security classification (Unclassified only)
 - RFP number
 - Name and address of the offeror
 - Serial number/copy number

(c) Style.

- (1) Submit a proposal that clearly and concisely describes and defines the contractor's response to the requirements contained in the RFP. General or vague statements such as "standard procedures will be used" or "good engineering practices" will not satisfy this requirement.
- (2) Do not elaborate unnecessarily or provide other presentations beyond that sufficient to present a complete and effective proposal. Elaborate artwork, expensive paper or bindings, and expensive visual or other presentation aids are neither necessary nor desired. Either of these may be construed as an indication of a lack of understanding or cost consciousness.

(3) Do not repeat information required in the responses in two or more proposal data requirements. Include detailed information in the area of the proposal where it contributes most critically. In other areas where a repeat discussion is necessary, provide a reference to the detailed discussion location.

(4) Provide all pertinent information in sufficient detail to permit evaluation of the proposal. Provide cross-references so that the Government can trace the various related discussions.

L31X TECHNICAL PROPOSAL

(a) Organization. In the Technical Proposal provide information and documentation in sufficient detail to clearly identify your overall qualifications. Divide the proposal into the following sections, in the order listed.

- Personnel
- Past Performance

(b) Personnel. In this section provide data concerning the qualifications of the personnel proposed.

(1) Minimum Requirements.

(i) Provide at least the minimum number of personnel specified below.

KEY PERSONNEL

<u>Labor Category</u>	<u>Minimum Number</u>
<u>ELF Bioeffects Literature Evaluator</u>	<u>1</u>
<u>ELF Bioeffects New Literature Evaluator</u>	<u>1</u>

(ii) ALL personnel proposed must meet the educational and experience qualifications specified on the Personnel Qualifications Sheet for the labor category in which they are proposed. Qualifications based on presumptions of future education or experience will be rated Unacceptable.

Note: Substitution of Key Personnel is subject to the "Key Personnel Requirements" clause in Section H.

(iii) Identify all proposed personnel who are not currently employees of the offeror or proposed subcontractor. Provide a statement signed by that person indicating willingness to be hired or work as a consultant or subcontractor if the contract is awarded to the offeror.

(2) Personnel Qualifications Sheet (PQS). Remove the PQSs (Attachment #2) from the solicitation and complete each form. List all personnel proposed for assignment. Include the completed PQSs in this section of the proposal.

(3) Personnel Data Form (PDF). Remove the PDF (Attachment #8) from the solicitation and supply the required information as explained below for each individual proposed as Key Personnel. Facsimiles and continuation sheets are permitted, and should follow the general format of the PDF. Place the PDFs behind the appropriate PQS in the proposal.

(i) Under "experience element", identify those areas of experience considered pertinent to the work required under the proposed acquisition.

(ii) Under "time period", indicate the period of time during which experience for the respective experience category was gained. Time periods may be concurrent for several elements.

(iii) Under "occasion", indicate job title, employer (Government activity or name of contractor) and the capacity in which the person worked to obtain the experience in that element.

(iv) Under "narrative", briefly describe or amplify total experience or other pertinent qualifications which specifically relate to this procurement. Also, identify the employees' depth of knowledge gained as a result of work experience; (i.e., a primary or collateral requirement of the job). Also indicate whether the employee is currently functioning as a key person under other contracts and describe their involvement under those contracts.

(c) **Past Performance.** In a separate attachment, provide information relative to past performance.

(1) Provide a list of all (maximum of 20) contracts and subcontracts with a value exceeding \$50,000 that are currently in process or have been completed during the past two years. If the maximum is exceeded, list the 20 most current actions. Contracts listed shall include those entered into with Federal, state or local governments as well as commercial customers. Offerors that are newly formed entities without prior contracts should list contracts and subcontracts as required above for all key personnel. Include the following information for each contract and subcontract:

- Name of contracting activity or commercial firm
 - Contract number
 - Contract type
 - Total contract value
 - Brief narrative (less than 10 lines) describing your involvement in the effort, complexity, objectives achieved, and types of personnel who performed under the contract. List ships or military systems involved, if any. List major subcontractors.
 - Procuring Contracting Officer* and telephone
 - Administrative Contracting Officer*, if different, and telephone
 - Program manager* or COR or and telephone
- *Or non-Government official with similar duties or rank

(2) Describe any quality awards or certifications that indicate the offeror possesses a high-quality process for developing and producing the product or service required. Such awards or certifications include, for example, the Malcolm Baldrige Quality Award, the automobile industry's QS 9000, Sematech's SSQA, or ANSI/EIA-599. Identify what segment of the company (one division or the entire company) received the award or certification and when it was received. If the award or certification is over three years old, present evidence that the qualifications still apply.

(3) Provide similar past performance data for major subcontractors (those performing more than 25% of the effort).

(4) The minimum desired level of performance on this contract is "Excellent". **See also clause BX09 describing the NEGATIVE TERM INCENTIVE.** Consequently, provide any other Past Performance information that would establish a history of providing "Excellent" performance on previous contracts.

**L11-900 NOTICE TO OFFERORS -- USE OF OZONE DEPLETING SUBSTANCES
(NAPS 5252.211-9000) (AUG 1993)**

(a) In accordance with section 326 of Pub L. 102-484, the Department of Defense is prohibited from awarding any contract which includes a DoD-directed specification or standard that requires the use of a Class I ozone depleting substance (ODS) or that can be met only through the use of such a substance unless such use has been approved by a senior acquisition official (SAO). The SAO approval is based on a technical certification that no suitable substitute for the ODS is currently available.

(b) To comply with this statute, the Navy has screened the specifications and standards associated with this solicitation. To the extent that ODS requirements were revealed by this review they are identified below:

Class I ODS Identified**Specification/Standard**

(c) If offerors possess knowledge about any other Class I ODS required directly or indirectly by the specification or standards, the Navy would appreciate such information in your response to this solicitation. Offerors are under no obligation to comply with this request and no compensation can be provided for doing so.

**L15-1 INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (FAR 52.215-1)
(MAY 2001)**

(a) *Definitions.* As used in this provision--

“Discussions” are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

“In writing”, “writing” or “written” means any worded or numbered expression which can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

“Proposal modification” is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

“Proposal revision” is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

“Time,” if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) *Amendments to solicitations.* If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) *Submission, modification, revision, and withdrawal of proposals.*

(1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages

(i) addressed to the office specified in the solicitation, and

(ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show--

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) *Submission, modification, revision, and withdrawal of proposals.*

(i) Offerors are responsible for submitting proposals, and any modifications or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is

specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is “late” and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and –

- (1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or
- (2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government’s control prior to the time set for receipt of offers; or
- (3) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) *Offer expiration date.* Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) *Restriction on disclosure and use of data.* Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall--

(1) Mark the title page with the following legend:

This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part-- for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with-- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if

it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

- (2) Mark each sheet of data it wishes to restrict with the following legend:

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) *Contract award.*

(1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) The Government may disclose the following information in postaward debriefings to other offerors:

- (i) The overall evaluated cost or price and technical rating of the successful offeror;
- (ii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection;
- (iii) A summary of the rationale for award; and
- (iv) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

L16-1 TYPE OF CONTRACT (FAR 52.216-1) (APR 1984)

The Government contemplates award of a **Firm Fixed Fee with Negative Term Incentives (See BX09)** contract resulting from this solicitation.

L33-2 SERVICE OF PROTEST (FAR 52.233-2) (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from the issuing office indicated in Block 7 of the SF 1447.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

**L52-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FAR 52.252-1)
(FEB 1998)**

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es): <http://www.arnet.gov/far/>

SECTION M EVALUATION FACTORS FOR AWARD

The following solicitation provisions are hereby incorporated by reference:

<u>Number</u>	<u>Title</u>	<u>Date</u>
52.217-5	EVALUATION OF OPTIONS	(JUL 1990)

M10 SINGLE AWARD

Due to the interrelationship of supplies and/or services to be provided hereunder, the Government intends to make a single award. The Government reserves the right to make a single award to the offeror whose offer is considered to be in the best interest of the Government, price and other factors considered.

M32 EVALUATION FOR AWARD - BEST VALUE

(a) Award will be made to that responsible offeror whose proposal, conforming to the solicitation, is determined to offer the best value to the Government. Offers will be evaluated on each of the areas identified in the provisions in Section L entitled, Technical Proposal and Price. The two evaluation factors listed below, **TECHNICAL CAPABILITY** and **PRICE**, are in descending order of importance.

I. TECHNICAL CAPABILITY

Subfactors:

- (a) Personnel
- (b) Past Performance

NOTE: The Technical Capability subfactors above are equal in importance.

II. PRICE

(b) Technical Capability is more important than Price. Although Price is the less important evaluation factor, it is important and will be seriously considered. The degree of its importance will increase with the degree of equality of the proposals in relation to Technical Capability, or when it is so significantly high as to diminish the value of the technical superiority to the Government.

(c) Past performance will be evaluated as an indicator of the offeror's expected future performance. The contracting officer will consider all available information concerning the offeror's past performance whether contained in the proposal or not. This may include information furnished by points of contact not named in the proposal or information from other sources such as commercial rating services. In the case of an offeror without a record of relevant past performance or for whom information on past performance is not available, the offeror will not be evaluated favorably or unfavorably on past performance.

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 220 hours per response, including the time for reviewing instructions searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, (0704-0188) 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to the above address. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO.		B. EXHIBIT		C. CATEGORY: TDP _____ TM _____ OTHER _____			
D. SYSTEM/ITEM ELF			E. CONTRACT/PR NO. N66604-2343-00M9		F. CONTRACTOR		
1. DATA ITEM NO. A001	2. TITLE OF DATA ITEM CONTRACTOR'S PROGRESS, STATUS, AND MANAGEMENT REPORT			3. SUBTITLE QUARTERLY PROGRESS REPORT			
4. AUTHORITY (Date Acquisition Document No.) DI-MISC-80227			5. CONTRACT REFERENCE SOW PARA 4.2.8		6. REQUIRING OFFICE NUWC CODE 3491		
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY QTRLY	12. DATE OF FIRST SUBMISSION 90 DACA	14. DISTRIBUTION			
8. APP CODE A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION SEE BLOCK 16	a. ADDRESSEE	b. COPIES		
16. REMARKS BLOCK 13: NOT LATER THAN 15 DAYS AFTER THE END OF EACH CALENDER QUARTER				NUWC CODE 3411		4	
				NUWC CODE 3491		2	
				BUMED		2	
				IITRI		1	
				PMW173		1	
				SSC SAN DIEGO		1	
				SSC CHARLESTON		1	
15. TOTAL →		12					
1. DATA ITEM NO. A002	2. TITLE OF DATA ITEM CONTRACTOR'S PROGRESS, STATUS, AND MANAGEMENT REPORT			3. SUBTITLE ANNUAL REPORT			
4. AUTHORITY (Date Acquisition Document No.) DI-MISC-80227			5. CONTRACT REFERENCE SOW PARA 4.2.9		6. REQUIRING OFFICE NUWC CODE 3491		
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY ANNLY	12. DATE OF FIRST SUBMISSION 365 DACA	14. DISTRIBUTION			
8. APP CODE A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION SEE BLOCK 16	a. ADDRESSEE	b. COPIES		
16. REMARKS: BLOCK 13: NOT LATER THAN 15 DAYS AFTER THE END OF EACH CALENDER YEAR				NUWC CODE 3411		4	
				NUWC CODE 3491		2	
				BUMED		2	
				IITRI		1	
				PMW173		1	
				SSC SAN DIEGO		1	
				SSC CHARLESTON		1	
15. TOTAL →		12					
G. PREPARED BY: GARY A. HENRY		H. DATE	I. APPROVED BY DATA MANAGER		J. DATE		

CONTRACT DATA REQUIREMENTS LIST (1 Data Item)										Form Approved OMB No. 0704-0188					
The public reporting burden for this collection of information is estimated to average 220 hours per response, including the time for reviewing instructions searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, (0704-0188) 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law no. person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to the above address. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.															
A. CONTRACT LINE ITEM NO.				B. EXHIBIT			C. CATEGORY: TDP _____ TM _____ OTHER _____								
D. SYSTEM/ITEM ELF				E. CONTRACT/PR NO. N66604-2343-00M9				F. CONTRACTOR							
1. DATA ITEM NO. A003		2. TITLE OF DATA ITEM TECHNICAL REPORT-STUDY/SERVICES					3. SUBTITLE LETTER REPORT								
4. AUTHORITY (Date Acquisition Document No.) DI-MISC-80508A				5. CONTRACT REFERENCE SOW PARA 4.2.5, 4.2.6				6. REQUIRING OFFICE NUWC CODE 3491							
7. DD 250 REQ LT		9. DIST STATEMENT REQUIRED		10. FREQUENCY ASREQ		12. DATE OF FIRST SUBMISSION ASREQ		14. DISTRIBUTION							
8. APP CODE A				11. AS OF DATE		13. DATE OF SUBSEQUENT SUBMISSION ASREQ		a. ADDRESSEE		b. COPIES					
16. REMARKS BLOCK 4: DELETE BLOCK 6A OF THE DID										Draft		Final			
								NUWC CODE 3411				4			
								NUWC CODE 3491				2			
								BUMED				2			
								IITRI				1			
								PMW173				1			
								SSC SAN DIEGO				1			
								SSC CHARLESTON				1			
15. TOTAL →										12					
1. DATA ITEM NO.		2. TITLE OF DATA ITEM					3. SUBTITLE								
4. AUTHORITY (Date Acquisition Document No.)				5. CONTRACT REFERENCE				6. REQUIRING OFFICE							
7. DD 250 REQ		9. DIST STATEMENT REQUIRED		10. FREQUENCY		12. DATE OF FIRST SUBMISSION		14. DISTRIBUTION							
8. APP CODE				11. AS OF DATE		13. DATE OF SUBSEQUENT SUBMISSION		a. ADDRESSEE		b. COPIES					
16. REMARKS:										Draft		Final			
												Reg		Repro	
15. TOTAL →															
G. PREPARED BY: GARY A. HENRY				H. DATE		I. APPROVED BY DATA MANAGER						J. DATE			

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

STATEMENT OF WORK

ELF COMMUNICATIONS PROGRAM NON-IONIZING ELECTROMAGNETIC RADIATION LITERATURE EVALUATION AND ASSESSMENT

1.0 BACKGROUND

The Naval Undersea Warfare Center (NUWC) is the Technical Direction Agent for the Navy's ELF Communications Program. In this role, NUWC is responsible for ELF Communications Program compliance with applicable environmental laws, regulations, and agreements. As part of this compliance, the Navy is required to monitor published professional literature containing scientific information generated on the biological and health effects of non-ionizing electromagnetic radiation for the frequency range of 1 - 300 Hz (ELF Bioeffects).

2.0 SCOPE

The contractor shall conduct a thorough and comprehensive evaluation and assessment of the published professional literature containing scientific information generated on the biological and health effects of non-ionizing electromagnetic radiation for the frequency range of 1 - 300 Hz. The published professional literature containing scientific information to be evaluated includes books, research reports, project reports, and articles and papers in peer-reviewed journals that describe and discuss biological and health effects of non-ionizing electromagnetic radiation for the frequency range of 1 - 300 Hz. The evaluation and assessment shall include both domestic and international literature published in English and other languages. The contractor shall also continue to develop and maintain the Navy's ELF Bioeffects literature library and database.

The above tasks shall provide a continuation of previous efforts conducted under NUWC contract N66604-99-C-2074.

3.0 REFERENCE DOCUMENTS

The following document is provided with this Statement of Work:

- a. ELF Bioeffects Literature Evaluation and Assessment Reference Information, Naval Undersea Warfare Center, 2002

4.0 REQUIREMENTS

4.1 ELF Bioeffects Library and Database Development and Maintenance

Continuation of the development and maintenance of the ELF Bioeffects literature library and database will be conducted as outlined in the following paragraphs. The existing ELF Bioeffects literature library and database will be delivered to the contractor upon contract award. The library and database will be returned to the Navy upon contract termination. Library and database descriptions and statistics are contained in Sections 5 and 6 of Reference (a).

4.1.1 Literature Search

Information services shall be used to identify relevant published literature to be reviewed, assessed, and added to the library and database. A computerized search of appropriate databases shall be conducted at least once each quarter. Databases that may be used for the literature search are listed in Section 1 of Reference (a). These databases have been developed to support literature from the electric power industry, environmental and health research communities, etc. The contractor shall submit any recommended additions or deletions to the list of databases to the Navy for approval. Other sources of literature such as technical journals and professional newsletters shall be utilized to augment the search for relevant published literature.

Keywords shall be used to conduct the search of the databases. The keywords for the search may be obtained from the lists of issue areas, subject categories, and subject materials included in Sections 2 and 3 of Reference (a).

4.1.2 Literature Screening

The lists of citations received from the information services and other sources shall be screened by the contractor to delete citations not relevant to the ELF Communications Program. Bibliographies included in the data obtained from the literature search shall be reviewed for additional relevant literature and appropriate citations will be added to the list of relevant citations.

4.1.3 Literature Retrieval and Storage

Copies of all literature included in the list of relevant citations shall be obtained (paper copies whenever available; otherwise microfiche or electronic copies). Copyright, royalty, and copying privilege arrangements shall be made if required. One hardcopy of each document shall be annotated with a unique file number and stored in the permanent ELF Bioeffects library for the ELF Communications Program. The ELF Bioeffects library is the property of the government and shall be returned to the Navy at the termination of the contract. If any citation is the subject of a special letter report (see paragraph 4.2.5), a copy of the document shall also be included with the letter report.

English translations of significant foreign literature shall be obtained. The Foreign Broadcast Information Service (FBIS) and Joint Publications Research Service (JPRS) may be utilized to obtain translated

literature. If the translated literature is unavailable from FBIS/JPRS, the literature shall be translated by the contractor or by independent translation services.

4.1.4 Indexing and Final Culling

Each document obtained under paragraph 4.1.3 shall be examined upon receipt to ensure that it is relevant to the ELF Communications Program before it is entered into the database and stored in the library. Deletions will be made if warranted. Prior to storage, each document shall be characterized according to subject categories, subject materials, and issue areas, and entered into the ELF Bioeffects library database (see paragraph 4.1.5). The approved list of subject categories and subject materials is contained in Section 2 of Reference (a). The approved list of issue areas is contained in Section 3 of Reference (a). The contractor shall submit any recommended additions or deletions to the list of subject categories and subject materials or the list of issue areas to the Navy for approval.

4.1.5 ELF Bioeffects Library Database

The existing database will be delivered to the contractor upon contract award. A description of the database is contained in Section 5 of Reference (a). The contractor shall maintain the ELF Bioeffects library database computer files. Each new citation entered into the database shall include title, author(s), author's institutional affiliation, source, year of publication, number of pages, number of references, subject categories, subject materials, issue areas, field type, field characteristics, species, and database file number. The database is capable of delivering bibliographic records of subject categories, subject materials, and issue areas. The database is the property of the government and shall be returned to the Navy at the termination of the contract.

4.2 Literature Evaluation and Assessment

The evaluation and assessment of the ELF Bioeffects literature shall be conducted as outlined in the following paragraphs.

4.2.1 Definition of Issue Areas

The approved list of Issue Areas is contained in Section 3 of reference (a). The contractor shall continue to develop and refine the list of Issue Areas as appropriate to accommodate future scientific development using the Criteria for Scientific Merit (see paragraph 4.2.2) and submit recommended changes to the Navy for approval.

4.2.2 Criteria for Scientific Merit

Criteria for Scientific Merit of ELF Bioeffects research shall be used in the literature assessment. The current approved Criteria for Scientific Merit are listed in Section 4 of Reference (a). The contractor shall modify and augment the Criteria for Scientific Merit as appropriate to accommodate

future scientific development. The contractor shall submit any recommended changes to the Criteria for Scientific Merit to the Navy for approval.

4.2.3 Literature Assessment

The contractor shall evaluate and assess the literature identified and collected under paragraph 4.1 on a continuous basis. The evaluation and assessment shall commence with that literature which has been identified as relevant under the previous contract but not yet reviewed. The results of the evaluation and assessment of the literature shall be reported in quarterly progress reports (see paragraph 4.2.8). Literature that shows the potential for new significant findings shall be evaluated and assessed by one or more consultants (New Literature Evaluators). The results of these evaluations and assessments shall be reported in letter reports (see paragraph 4.2.5).

4.2.4 Consultants (New Literature Evaluators)

The contractor shall arrange for the availability of at least one consultant (recognized expert in his/her field) in each of the Issue Areas (see Paragraph 4.2.1) to perform evaluations and assessments of significant new literature. Literature that in the opinion of the contractor shows the potential for new significant findings, especially any breakthrough items, shall be submitted to an appropriate consultant(s) for evaluation and assessment. A consultant may be qualified to address more than one Issue Area.

4.2.5 Letter Reports

The contractor shall prepare letter reports on significant new literature evaluations. As a minimum the letter reports shall include:

- a. Description of the finding
- b. Evaluation of scientific merit
- c. Relevance to ELF Communications
- d. Consultant(s) evaluation and assessment, and
- e. Conclusions

These letter reports may be included as part of the quarterly progress reports (see paragraph 4.2.8) unless in the contractor's opinion the literature indicated new significant findings, especially any breakthrough items. In this case, the letter report shall be delivered to the Navy as soon as possible along with a copy of the literature that was reviewed (CDRL A003).

4.2.6 Scientific Symposia

To keep abreast of the scientific developments in Bioeffects research, the contractor shall monitor at least three domestic or one international and one domestic scientific or industrial symposia each year concerning biological effects from ELF non-ionizing electromagnetic fields. The contractor shall make recommendations to the Navy regarding which symposia to monitor and which contractor or consultant personnel should attend at least 30 days prior to the start of the symposia. The contractor will attend symposia under this contract with authorization from the Navy. A letter report shall be prepared after each meeting highlighting the proceedings and discussing the findings. These letter reports may be included as part of the quarterly progress reports (see paragraph 4.2.8) unless in the contractor's opinion the proceedings indicate new significant findings, especially any breakthrough items. In this case, the letter report shall be delivered to the Navy as soon as possible (CDRL A003).

4.2.7 Environmental Review Committee

The contractor shall attend the annual ELF Communications System Environmental Review Committee (ERC) meetings sponsored by the Navy and shall report on the progress made, findings, and trends in the literature during the intervening period.

4.2.8 Quarterly Progress Report

Quarterly progress reports to be delivered IAW(CDRL A001). They shall be structured in the contractor's format, and as a minimum, contain status of the literature search, status of the literature evaluation and assessment, and results of the literature evaluation and assessment including significant findings. Letter reports of significant new literature evaluations and letter reports highlighting the proceedings and discussing the findings of monitored scientific symposia may be included in the quarterly progress report. Detailed abstracts of each article reviewed and added to the library shall also be included with each quarterly progress report.

4.2.9 Annual Report

An annual report structured in the contractor's format, shall be delivered IAW CDRL A002. The report is intended to supplement and summarize the material presented in the quarterly reports. Comparison of the findings in the new literature with the past findings of the National Academy of Sciences (NAS), American Institute of Biological Sciences (AIBS), and the Navy's previous ELF Bioeffects Literature Evaluation and Assessment reports shall be included. An introductory overview of the project and program activities shall be included in the annual report.

5.0 PERFORMANCE

5.1 Period of Performance

The period of performance shall be from 1 January 2004 or the date of contract award, whichever is later, through 31 March 2004, with quarterly option periods, if exercised, through 31 December 2008.

5.2 Place of Performance

This work will be accomplished at the contractor's facilities.

5.3 Travel

Travel to various Scientific Symposia and to the annual Environmental Review Committee (ERC) meeting will be required.

6.0 SECURITY

The work required under this Statement of Work is UNCLASSIFIED.

7.0 TECHNICAL REPRESENTATION

The Principle Investigator for this task is Mr. Robert Aiksnoras, ELF Communications Program Manager, Code 3491, telephone (401) 832-5413. The Contracting Officer's Representative is Mr. Gary Henry, Code 3411, telephone (401) 832-5421. Both Mr. Aiksnoras and Mr. Henry are located at the Naval Undersea Warfare Center Division Newport, Newport RI.

Performance Requirements Summary Table

Requirement:	Performance Objective	Performance Standard	Acceptable Quality Level (AQL)	Quality Surveillance Plan Typical Monitoring Methods
4.1 ELF Bioeffects Library and Database Development and Maintenance	Develop and maintain an ELF Bioeffects library and database.	Identify all relevant literature. Obtain hard copies of identified literature and add to library. Categorize and add identified literature information to database.	No significant errors or omissions occur. Standard met 100% of the time. Standard met 100% of the time.	Government does not independently identify significant relevant literature missed by the contractor. Government spot check review of library. Government spot check review of database.
4.2 Literature Evaluation and Assessment	Evaluate and assess ELF Bioeffects literature. Evaluate and prepare letter reports on significant new literature.	Evaluation and assessment performed with regard to "Criteria for Scientific Merit" identified in <u>ELF Bioeffects Literature Evaluation and Assessment Reference Information</u> , SOW paragraph 3.0 (a). Significant new literature identified and referred for expert consultant review. Evaluation of significant literature to be performed by the appropriate expert consultant and documented in letter reports.	No significant errors or omissions occur. Standard met 100% of the time.	Government review of quarterly and letter reports. Government review of letter reports.
4.2.6 Attend Scientific Symposia	Attend symposia per SOW and document findings with letter reports.	Attend 3 domestic or 1 domestic and 1 international scientific symposia or meetings per year.	Standard met 100% of the time.	Government review of letter reports.
4.2.7 Attend Annual Environmental Review Committee Meeting	Attend annual Environmental Review Committee meeting and report on previous year's findings.	Attend annual Environmental Review Committee meeting and report on previous year's findings.	Standard met 100% of the time.	Government attendance at annual Environmental Review Committee meeting.

Performance Requirements Summary Table

Requirement:	Performance Objective	Performance Standard	Acceptable Quality Level (AQL)	Quality Surveillance Plan Typical Monitoring Methods
4.2.8 Quarterly Progress Report	Document results of quarterly literature search and evaluation including abstracts of all cited literature.	Reports fully describe status and results of literature search and evaluation. Abstracts accurately reflect cited articles.	No significant errors or omissions occur.	Government review of quarterly reports.
4.2.9 Annual Report	Document and supplement results of quarterly literature searches and evaluations. Compare results against independent sources.	Reports fully describe status and results of literature search and evaluation. Describe agreements and differences with NAS, AIBS and Navy's existing ELF Bioeffects findings.	No significant errors or omissions occur. No significant errors or omissions occur.	Government review of annual report. Government review of annual report.

**ELF BIOEFFECTS LITERATURE
EVALUATION AND ASSESSMENT
REFERENCE INFORMATION**

**NAVAL UNDERSEA WARFARE CENTER
NEWPORT, RI**

2002

Statement of Work Reference A

SECTION 1

LITERATURE SEARCH DATABASES

LIST OF LITERATURE SEARCH DATABASES

ABI/INFORM

Agricola

Biosis

CAB Abstracts

Compendex Plus

Conference Papers Index

Dissertation Abstracts

Electric Power Database

Embase

Energy Science and Technology

Energyline

Environmental Bibliography

Enviroline

ERIC

INSPEC

IVI EMF Database

LC MARK

MEDLINE

Occupational Safety and Health

NTIS

Pollution Abstracts

SECTION 2

SUBJECT CATEGORIES AND MATERIALS

SUBJECT CATEGORIES

ANIMAL HEALTH
AUDITORY EFFECTS
BEHAVIORAL EFFECTS
BIOLOGICAL SYSTEM EXPOSURE
BLOOD CIRCULATION
BODY CURRENT
BODY IMPEDANCE
BODY-GROUND CAPACITANCE
BODY-GROUND IMPEDANCE
BRIDGING POTENTIALS
CANCER INCIDENCE AND RISK
CANCER INDUCTION
CANCER PROGRESSION
CANCER PROMOTION
CARDIOVASCULAR EFFECTS
CELL BIOCHEMISTRY
CELL CHARACTERISTICS
CELL MEMBRANE EFFECTS
CELL PHYSIOLOGY
CELL PROLIFERATION
CELLULAR EFFECTS
CHEMISTRY
CHONDROGENIC EFFECTS
CONTACT IMPEDANCE
CONTROLLED SPECIES
DETECTION AND REACTION TO ELF FIELDS
DISTRIBUTION LINES
ECOLOGICAL RISK
ELECTRIC BLANKETS
ELF BIOEFFECTS RESEARCH
ELF COMMUNICATIONS SYSTEM
ELF FIELD DOSIMETRY
EM STIMULATION
EMBRYOLOGIC EFFECTS
EMBRYONIC DEVELOPMENT
ENDOCRINOLOGICAL EFFECTS
EPIDEMIOLOGICAL STUDIES
EXPERIMENTAL DESIGN
EXPOSURE INDICES
EXPOSURE STANDARDS
EXPOSURE-SYSTEM ARTIFACTS
EXTERNAL FIELDS INTERACTION
GENETIC PROCESSES
HEALING EFFECTS

HEMATOLOGIC EFFECTS
HUMAN EXPOSURE
IMMUNE SYSTEM EFFECTS
IMMUNOLOGICAL RESPONSE
IN VITRO EXPOSURE
IN VIVO EXPOSURE
INTERACTION MECHANISMS
INTERFERENCE WITH MEDICAL DEVICES
LITIGATION
LONG-TERM EXPOSURE
MEASUREMENT METHODS FOR ELF FIELDS
METABOLIC EFFECTS
METHODOLOGY
MICROWAVE EXPOSURE
MOLECULAR BIOLOGY
MOLECULAR EFFECTS
MUSCULAR EFFECTS
MUTAGENICITY
NEUROBEHAVIORAL EFFECTS
NEUROPHYSIOLOGICAL RESPONSE
NON-IONIZING RADIATION
OCCUPATIONAL FIELD EXPOSURE
OCCUPATIONAL HEALTH
OCULAR EFFECTS
ORGAN ANALYSIS
ORGAN DOSIMETRY
ORIENTATION
OSTEOGENIC EFFECTS
PATHOLOGIC EFFECTS
PHYSIOLOGICAL EFFECTS
PHYSIOTHERAPY
PLANT GROWTH
PONDERMOTIVE FORCES
PRENATAL EXPOSURE
PROTECTIVE CLOTHING
PROTECTIVE MEASURES
PSYCHOPHYSICAL EFFECTS
PUBLIC HEALTH
PULSED MAGNETIC FIELD THERAPY
QUALITY CONTROL
RECORDING METHODS
REGENERATION
REPRODUCTIVE EFFECTS
RESIDENTIAL EXPOSURE TO ELF FIELDS
RESPIRATORY BURST
REVIEW-ARTICLE

RISK ANALYSIS AND ASSESSMENT
SEAFARER COUPLING WITH LOCAL ECOSYSTEM
SEAFARER GROUND TERMINALS
SEAFARER OPERATING CHARACTERISTICS
STATISTICAL ANALYSIS
STEP POTENTIALS
TERATOLOGY
THEORETICAL AND EXPERIMENTAL MODELING
THEORETICAL STUDIES
TRANSCRIPTIONAL EVENTS
TRANSMISSION LINES
VIDEO DISPLAY TERMINALS (VDT)
VOLTAGE AND CURRENT
WINDOW EFFECTS

SUBJECT MATERIALS

ADVERSE EFFECTS
BEHAVIOR
BENEFICIAL EFFECTS
BIOELECTOCHEMISTRY
BIOLOGICAL EFFECTS
BIOLOGICAL RHYTHMS
BIOMAGNETISM
BIOPHYSICS
BONE HEALING AND RESORPTION
CARCINOGENIC EFFECTS (CANCER INDUCTION, PROMOTION, AND RISK)
CARDIOVASCULAR EFFECTS
CELL MEMBRANE EFFECTS
CELLULAR AND EXTRACELLULAR EFFECTS
CELLULAR EXPOSURE
CENTRAL NERVOUS SYSTEM EFFECTS
CHRONIC EXPOSURE TO ELF FIELDS
CHRONIC STIMULATION
CYTOGENETICS
DOSIMETRY
ECG ACTIVITY
ECOLOGY
EEG ACTIVITY
ELECTRIC AND MAGNETIC FIELD DOSIMETRY
ELECTRIC AND MAGNETIC STIMULI
ELECTRIC CURRENT THERAPY
ELECTRICAL APPLIANCES
ELECTROCHEMISTRY
ELECTROCHEMOTHERAPY
ELECTROSHOCKING
ELECTROSTIMULATION
ELF ELECTRIC FIELD MITIGATION
ELF EXPOSURE ASSESSMENT
ELF FIELD DOSIMETRY
ELF FIELD INTERACTION WITH LIVING ORGANISMS
ELF MAGNETIC FIELD MITIGATION
EMF POLICY
EMF TREATMENT
ENDOCRINOLOGY
ENDOGENOUS EMF
ENVIRONMENTAL EXPOSURE
EPIDEMIOLOGY
EXPOSURE CHARACTERIZATION
EXTERNAL FIELDS
FERTILITY AND REPRODUCTION

FIELD INDUCTION
FIELD INTENSITY AND FREQUENCY WINDOWS
FIELD INTERACTION WITH BIOLOGICAL SYSTEMS
FIELD INTERACTION WITH LIVING ORGANISMS
FIELD LEVELS
FIELD STRENGTH
GENERAL HEALTH
GENETICS
GROWTH AND DEVELOPMENT
HEALTH HAZARDS
HEMATOLOGY
HUMAN HEALTH
IMMUNE SYSTEM EFFECTS
IMMUNOLOGY
INFLAMMATION
KINESIS
LITIGATION
MAGNETIC FIELD STIMULATION
MAGNETIC FIELD THERAPY
MAGNETIZATION
MEASUREMENT TECHNIQUES
MECHANISMS
METABOLISM
MICROWAVE RADIATION
MOLECULAR BIOLOGY
MUSCULAR EFFECTS
MUTAGENIC EFFECTS
NEUROLOGY AND NEUROENDOCRINOLOGY
OCCUPATIONAL EXPOSURE
PACEMAKER COUPLING
PATHOLOGY AND HISTOLOGY
PHYSICAL CHEMISTRY
PHYSIOLOGY AND BIOCHEMISTRY
POPULATION DYNAMICS
PROPER EMF
RADIOFREQUENCY FIELDS
REPRODUCTION
RESIDENTIAL EMF
RESPIRATION
SHOCK HAZARDS
SIGNALS AND NOISE
SIMULATIONS
SOURCE CHARACTERIZATION
SPERMATOGENESIS
TERATOGENICITY
TRANSIENT FIELDS

VIBRATIONS AND NOISE
VISION
VISUAL STIMULI
WINDOW EFFECTS

SECTION 3

ISSUE AREAS

ISSUE AREAS

ACETYLCHOLINESTERASE (AChE)
ACETYLTRANSFERASE
ACOUSTICS
ACTIVITY FACTORS
ACUPUNCTURE
ACUTE LYMPHOCYTIC LEUKEMIA
ACUTE MYELOGENOUS LEUKEMIA
ADENOSINE DEAMINASE
ADENYLATE CYCLASE
ADRENAL ACTIVITY
ADRENALINE LEVEL
AEROSOLS
AGGRESSIVENESS
ALCOHOLISM
ALKALINE PHOSPHATASE
ALZHEIMER'S DISEASE
AMBULATORY ACTIVITY
AMINO ACID METABOLISM
ANALGESIA
ANGIOGENESIS
ANOXIC STRESS
ANTIESTROGENS
ANTIOXIDENTS
APOPTOSIS
AROUSAL RESPONSE
ARTHRITIS
ARTHROSIS
ATP CONTENT
ATP METABOLISM
ATP PRODUCTION
ATPASE
ATTRACTION OF PESTS TO ELECTRIC FIELDS
AUTOIMMUNE REACTIONS
AVOIDANCE
BACTERIA METABOLIC ACTIVITY
BASAL STEROID PRODUCTION
BEHAVIORAL DEVELOPMENT
BEHAVIORAL PERFORMANCE
B-FIBER CONDUCTION VELOCITY
BIOLOGICAL MODEL
BIOLOGICAL RHYTHMS
BIOLUMINESCENCE
BIOMAGNETISM
BIOMASS

BIOSYNTHESIS
BIRTH DEFECTS
BLASTOGENESIS
BLOOD CHEMISTRY
BLOOD CHOLINESTERASE REDUCTION
BLOOD FLOW
BLOOD PRESSURE
BLOOD SAMPLING
BODY CAPACITANCE
BODY CURRENT
BODY GROUND CAPACITANCE
BODY GROUND IMPEDANCE
BODY IMPEDANCE
BODY WEIGHT
BONE GROWTH
BONE HEALING
BONE LENGTHENING
BONE MARROW
BONE REPAIR
BONE RESORPTION
BRAIN
BRAIN CANCER
BRAIN PHYSIOLOGY
BRAIN STIMULATION
BRAIN TISSUE METABOLISM
BRAIN TISSUE MORPHOLOGY
BRAIN TUMOR
BRAINSTEM SYSTEM
BREAST CANCER
BREEDING
BUD GROWTH
BURIED POWER LINES
BURSTER NEURON MEMBRANE CURRENTS
CA 2+ SEQUESTRATION
CALCITONIN
CALCIUM BINDING
CALCIUM CONTENT
CALCIUM EXCHANGE
CALCIUM ION EFFLUX
CALCIUM ION TRANSPORT
CALCIUM METABOLISM/MOBILIZATION
CALCIUM RESPONSE
CALCIUM UPTAKE
CALMODULIN
CAMP LEVELS
CAMP METABOLISM

CAMP PROTEIN KINASE
CANCER
CANCER ASSOCIATION
CANCER DEVELOPMENT
CANCER INDUCTION
CANCER PROGRESSION
CANCER PROMOTION
CANCER TREATMENT
CAPILLARY ANGIOPATHY
CARDIAC ARRHYTHMIA
CARDIAC PACEMAKERS
CARDIOVASCULAR DISEASE
CARDIOVERSION
CAT EXPRESSION
CATARACTS
CATECHOLAMINE RELEASE
CATECHOLAMINE UPTAKE
CAUSALITY
CELL ADHESION
CELL COMMUNICATION
CELL CYCLE
CELL DIFFERENTIATION
CELL DIVISION AND GROWTH
CELL DRIFTING
CELL ENERGY METABOLISM
CELL FORMATION
CELL GROWTH
CELL HORMONAL RESPONSES
CELL MEMBRANE CONDUCTANCE
CELL MEMBRANE DISPLACEMENT
CELL MEMBRANE FUNCTION
CELL MEMBRANE IONIC PERMEABILITY
CELL MEMBRANE POTENTIAL
CELL METABOLISM
CELL MIGRATION
CELL MOBILITY
CELL MORTALITY
CELL ORGANELLES
CELL PROLIFERATION
CELL SEPARATION
CELL SIGNALING
CELL STIMULATION
CELL SURFACE RECEPTOR REDISTRIBUTION
CELL SWELLING
CELL TRANSCRIPT LEVEL
CELL TRANSFORMATION

CELL VOLUME
CELLULAR PHONES
CELLULAR RESISTANCE TO VIRAL INFECTIONS
CELLULAR RESPIRATION
C-FIBER CONDUCTION VELOCITY
CGMP
CHILDHOOD CANCER
CHILDHOOD LEUKEMIA
CHLOROPHYLL PHOTOOXIDATION
CHOLESTEROL
CHOLINERGIC ACTIVITY
CHOLINESTERASE ACTIVITY
CHROMATIN CONDENSATION
CHROMOSOMAL ABERRATIONS/ABNORMALITIES
CHRONIC EXPOSURE
CHRONIC GASTRITIS
CHRONIC STIMULATION
CIRCADIAN RHYTHM
C-MYC PROMOTER
C-MYC TRANSCRIPTS
CO₂ PRODUCTION
COGNITION
COGNITIVE TESTING
COLLAGEN
COLLAGEN SYNTHESIS
COMPUTER CODES
COMPUTER MODELS
CONDITIONED REACTION
CONDUCTIVITY
CONFOUNDING FACTORS
CONGENITAL ANOMALIES
CONTACT CURRENTS
CONTACT IMPEDANCE
CONTACT RESISTANCE
COPULATORY BEHAVIOR
CORONA EFFECTS
CROPPING EFFICIENCY
CSF-5-HIAA CONCENTRATION
CURRENT DENSITY
CURRENT INDUCTION
CYCLOTRON RESONANCE
CYTOCHROME OXIDASE
CYTOCHROMES
CYTOGENETIC EFFECTS
CYTOKINES
CYTOLYSIS

CYTOLYTIC ABILITY
CYTOPLASMIC STREAMING
CYTOSKELETAL ALTERATIONS
CYTOSOLIC CALCIUM OSCILLATOR
CYTOTOXIC EFFECTS
CYTOTOXICITY OF LYMPHOCYTES
DAY-NIGHT DIFFERENCE
DECISION MAKING
DECOMPOSITION
DEFECATION
DEFIBRILLATION
DETECTION THRESHOLD
DIFFERENTIAL GENDER RESPONSES
DIFFUSE OSTEOPOROSIS
DISTRIBUTION SYSTEMS
DNA CONDENSATION
DNA CONFORMATION
DNA CONTENT
DNA DAMAGE
DNA METABOLISM
DNA MICROARRAY
DNA ORIENTATION
DNA REPAIR
DNA SEPARATION
DNA STRUCTURE
DNA SYNTHESIS
DNA UPTAKE
DNA/RNA TRANSCRIPTION
DOMESTIC APPLIANCES
DOMESTIC EXPOSURE
DOPA
DOPAMINE RELEASE
DROWSINESS
DRUG ADDICTION
DYSTONIA
ECITABILITY
ECOLOGY
EEG ACTIVITY
EEG RHYTHMS
EGG FERTILIZATION
ELECTRIC BLANKETS
ELECTRIC ORGAN DISCHARGE
ELECTRIC SHOCK
ELECTRIC UTILITY WORKERS
ELECTRICAL WORKERS
ELECTROMAGNETIC INTERFERENCE (EMI)

ELECTROMAGNETIC PULSE
ELECTRON TRANSFER
ELECTROPHORESIS
ELECTROPHOSPHENES/MAGNETOPHOSPHENES
ELECTROPHYSIOLOGY
ELECTRORECEPTORS
ELF EXPOSURE APPARATUS
EM TREATMENT
EMBRYOGENESIS
EMBRYOLOGICAL DEVELOPMENT
EMBRYONIC LETHALITY
EMBRYONIC TOXICITY
ENDOCRINE ALTERATIONS
ENDOCRINE RESPONSE
ENDOGENOUS NEUROTRANSMITTERS
ENDOPLASMIC RETICULUM STRUCTURE DISINTEGRATION
ENERGETICS
ENVIRONMENTAL EXPOSURE
ENZYME ACTIVITY
ENZYME PRODUCTION AND SYNTHESIS
EPIDEMIOLOGICAL METHODS
EPIDEMIOLOGICAL STUDY
EPIDURAL SPINAL CORD STIMULATION
EPILEPSY
ERYTHROCYTE
ESTROGEN LEVELS
EVOKED RESPONSES
EXCITED STATES
EXPERIMENTAL DESIGN
EXPERIMENTAL METHODOLOGY
EXPERIMENTAL PROTOCOL
EXPLORATORY BEHAVIOR
EXPOSURE ASSESSMENT
EXPOSURE ASSESSMENT METHODOLOGY
EXPOSURE DOSIMETRY
EXPOSURE FACILITY
EXPOSURE MEASUREMENTS
EXPOSURE METRICS
EXPOSURE STANDARDS
EXPOSURE SYSTEMS
EXPOSURE-RESPONSE RELATIONSHIPS
EYE SENSITIVITY
FATIGUE
FECUNDITY
FEEDING
FERTILITY

FETAL DEATH
FETAL DEVELOPMENT
FETAL LOSS
FETAL MALFORMATIONS
FETAL RESORPTION
FETUS SIZE AND WEIGHT
FIELD AVOIDANCE
FIELD CANCELLATION
FIELD DETECTION
FIELD ENHANCEMENT
FIELD GENERATION
FIELD INDUCTION
FIELD MEASUREMENTS
FIELD PERCEPTION
FIELD REDUCTION
FIELD SHIELDING
FIELD-INDUCED AVERSION
FOLIAR CATION CONCENTRATION
FORNIX-FIMBRIA STIMULATION
FRACTURE HEALING
FREE RADICALS
FREQUENCY
FREQUENCY THRESHOLDS
GAP JUNCTIONS
GARMENT WORKERS
GASTROINTESTINAL CANCERS
GENE EXPRESSION
GENE THERAPY
GENETICALLY MODIFIED STRAIN
GENOTOXICITY
GEOGRAPHIC INFORMATION SYSTEM
GERMINATION RATE
GESTATION
GESTATIONAL DURATION
GLUCURONIDASE ACTIVITY
GLYCOSAMINOGLYCAN METABOLISM
GLYCOSAMINOGLYCAN SYNTHESIS
GRIP PERCEPTION
GROUND TERMINAL
GROUND TERMINAL CURRENT
GROUND TERMINALS DESIGN AND SAFETY
GROWTH AND LIVABILITY
GROWTH FACTORS
GROWTH RATE
GROWTH RETARDATION
GYNECOLOGICAL CANCERS

HAEMATOLOGIC AND IMMUNOLOGIC FUNCTIONS
HARMONICS
HATCHABILITY
HEADACHE
HEALTH STATUS
HEART FIBRILLATION
HEART RATE
HEART STIMULATION
HEAT SHOCK
HEAT SHOCK GENES
HEMOGLOBIN VALUES
HIGH-VOLTAGE SUBSTATIONS
HISTAMINE
HISTOPATHOLOGIC DIFFERENCES
HIVE WEIGHT
HOMING
HOT SPOTS
HUMORAL FACTORS
HYPALGESIA
HYPERTENSION
HYPERTHERMIA
HYPOTHALAMIC ACTIVITY
HYPOXIA
IMMOBILIZATION ATROPHY
IMMUNOLOGIC RESPONSES
IMPEDANCE MEASUREMENTS
INDUCED ELECTRIC FIELDS
INDUCED VIBRATIONS
INDUCTION CURRENT
INFANT EXPOSURE
INFERTILITY
INFLAMMATION
INFORMATION PROCESSING AND INTEGRATION
INFORMATION TRANSFER
INSTRUMENTATION
INSULIN DEFICIENCY
INSULIN RELEASE
INTENSITY THRESHOLDS
INTERACTION MECHANISM
INTERFERON
INTERLEUKIN PRODUCTION
INTER-RESPONSE TIME
INTRACELLULAR CALCIUM CONCENTRATION
ION CHANNELS
ION CONCENTRATION IN BLOOD
ION CONCENTRATION IN CSF

ION CONCENTRATION IN TISSUE
ION INTERFERENCE MECHANISM
ION MOTION
ION PARAMAGNETIC RESONANCE (IPR)
ION-BINDING
ION-BINDING EQUILIBRIA
IRON CONTAINING CELLS
JB CELLS
KIDNEY
KIDNEY CANCER
KINDLING BEHAVIOR
KINESIS
KININS
LACTATION INDEX CHANGE
LEAF DIFFUSION RESISTANCE
LEAF TIPS
LEARNING
LECTIN-INDUCED MITOGENESIS
LET-GO CURRENT
LETHAL MUTATIONS
LEUKEMIA MORTALITY
LEUKEMIA RISK
LEUKEMOGENESIS
LEUKOCYTES
LIGAND BINDING
LIPID CHANGES
LIPOSOMES
LISTLESSNESS
LITIGATION
LITTER SIZE
LITTER VIABILITY
LIVER
LIVER CANCER
LONG-TERM POTENTIATION
LOW BIRTH RATES
LOW BIRTH WEIGHTS
LUNG
LUNG CANCER
LYMPHATIC LEUKEMIA
LYMPHOCYTE ACTIVATION
LYMPHOCYTE CYTOTOXICITY
LYMPHOCYTE PROLIFERATION
LYMPHOCYTE RESPONSE
LYMPHOMA
LYSOZYME ACTIVITY
MAGNETIC FIELD HAZARD

MAGNETIC FIELD MITIGATION
MAGNETIC RESONANCE IMAGING (MRI)
MAGNETOPHOSPHENES
MAGNETORECEPTION
MAGNETOSOMES
MAGNETOTACTIC BACTERIA
MALFORMATIONS
MALIGNANT TUMOR
MATING BEHAVIOR
MATURATION
MEASUREMENT ERRORS
MEASUREMENT METHODS
MEASUREMENT OF CURRENTS
MECHANICAL EFFECTS
MECHANISMS
MEDICAL DEVICES
MEDICAL PROSTHESES
MELANOMA
MELATONIN ACTIVITY
MELATONIN CONCENTRATION
MELATONIN LEVEL
MELATONIN METABOLISM
MELATONIN PRODUCTION
MELATONIN SUPPRESSION
MEMBRANE CONDUCTANCE
MEMBRANE RESPONSE TO ION CONCENTRATION CHANGES
MEMBRANE SURFACE AFFINITY
MEMBRANE TRANSPORT
MEMBRANE-BOUND ENZYMES
MEMORY RETENTION
META ANALYSIS
METABOLIC ACTIVITY
METABOLIC RESPONSE
METABOLISM
MICRONUCLEUS FORMATION
MICROTUBULES
MIGRATION
MINIMUM ALVEOLAR CONCENTRATION
MISCARRIAGE
MISCLASSIFICATION
MITOGEN RESPONSE
MITOGENESIS
MITOTIC INDEX VARIATION
MITOTIC RATE
MODEL SYSTEMS
MODELING

MOOD EFFECTS
MORBIDITY
MORPHOGENESIS
MORPHOLOGIC RESPONSE
MORTALITY
MOTILITY
MOTION OF MEMBRANE-BOUND MOLECULES
MOTOR ACTIVITY
MOTOR PERFORMANCE
MUSCLE CONTRACTION
MUSCLE STIMULATION
MUSCULAR DYSTROPHY
MUSCULOSKELETAL DISORDERS
MUTAGENESIS
MUTAGENICITY
MUTATION FREQUENCY
NaF STIMULATION
NALOXONE
NEONATAL DEATH
NEOPLASMS
NERVE GROWTH FACTOR
NERVE REGENERATION
NERVOUS SYSTEM FUNCTION
NESTLING GROWTH
NEURAL RESPONSE
NEURAL STEMS CONDUCTIVITY
NEURAL STIMULATION
NEURITE OUTGROWTH
NEUROBLASTOMA
NEUROCHEMICAL EFFECTS
NEURODEGENERATIVE DISEASE
NEURODYNAMIC CHANGES
NEUROENDOCRINE RESPONSE
NEUROLOGICAL STATUS
NEURONAL EXCITABILITY
NEUROTRANSMITTER LEVELS IN CSF
NEUROTRANSMITTER LEVELS IN TISSUE
NEUROTRANSMITTER METABOLITE IN CSF
NEUROTRANSMITTER METABOLITE IN TISSUE
NEUROTRANSMITTER NORADRENALINE RELEASE
NEUROTRANSMITTERS
NITRATE LEVEL
NITRIC OXIDE SYNTHASE
NOISE
NOISE ENERGY
NOISE TRANSMISSION

NON-MALIGNANT TUMOR
NONUNION TREATMENT
NOREPINEPHRINE CONTENT
NUCLEAR MAGNETIC RESONANCE (NMR) SYSTEMS
NUTRIENT EFFLUX
OCCUPATIONAL EXPOSURE
OEDEMA
ONCOGENES
OPERANT BEHAVIOR
OPIOIDS
ORGAN HISTOLOGY
ORIENTATION
ORNITHINE DECARBOXYLASE
ORTHOPEDIC IMPLANTS
OSTEOARTHRITIS
OSTEOBLAST DESENSITIZATION
OSTEOGENESIS
OSTEOGENIC EFFECTS
OSTEOPOROSIS TREATMENT
OVARIAN HISTOPATHOLOGY
OXIDATIVE STRESS
OXYGEN CONCENTRATION
OXYGEN UPTAKE
PACEMAKER
PACEMAKER COUPLING
PAIN
PAIN RELIEVING EFFECTS
PANCREAS
PANCREATIC FUNCTION
PARENTAL CARE
PARENTAL EXPOSURE
PARKINSON'S DISEASE
PERCEPTION
PERCEPTION THRESHOLD
PERFORMANCE RHYTHM
PERINATAL DEATH
PERITONEAL EXUDATE CELLS
PEROXIDASE/OXIDASE
PERSONAL EXPOSURE LOGGING
PH
PHAGOCYTIC ACTIVITY
PHONORECEPTORS
PHORBOL ESTERS
PHOSPHOLIPASE
PHOSPHOLIPIDS
PHOSPHORYLATION

PHOTORECEPTORS
PHOTOSYNTHESIS
PHYSIOTHERAPY
PINEAL ACTIVITY
PINEAL MELATONIN RHYTHM
PINEALECTOMY
PLANT GROWTH
PLANT ROOTS
PLANT TRANSPIRATION
PLASMA CORTICOSTEROID LEVEL
POLARITY
POLARIZATION OF THE FIELD
POLYAMINES
POLYMERASE CHAIN REACTION (PCR)
POLYPEPTIDES
POLYSYNAPTAL PATHWAY POTENTIATION
POPULATION AGE STRUCTURE
POPULATION DYNAMICS
POPULATION IDENTIFICATION
PORTABLE APPLIANCES
POSTMENOPAUSAL BREAST CANCER
POSTNATAL DEVELOPMENT
POSTNATAL WEIGHT GAIN
POSTSYNAPTIC COMPOUND ACTION POTENTIAL
POSTWEANLING MORTALITY
POTASSIUM UPTAKE
POWER LINE-BODY CAPACITANCE
POWER LINES
POWER PLANTS
PREDATION
PREGNANCY
PREGNANCY RATE
PRENATAL DEATH
PRENATAL DEVELOPMENT
PRESSURE SORES
PREWEANLING MORTALITY
PRM (PARAMETRIC RESONANCE MODEL)
PRODUCTIVITY
PROLACTIN LEVEL
PROSTATE CANCER
PROSTGLANDIN SYNTHESIS
PROSTGLANDINS
PROTEIN BINDING
PROTEIN EXPRESSION
PROTEIN KINASE
PROTEIN METABOLISM

PROTEIN SYNTHESIS
PSEUDARTHROSES TREATMENT
PUBLIC EXPOSURE
PUBLIC POLICY
PULSE INSTABILITY
PULSE MODULATION
QUEEN LOSS
RADICAL PAIR
RAILWAY ENGINE DRIVERS
REACTION TIME
REACTIVE OXYGEN SPECIES
RECEPTORS
RECREATIONAL EXPOSURE
RECTAL TEMPERATURE
REDOX REACTIONS
REFLEX CHANGE
REINFORCEMENT
RELATIVE RISK
REPRODUCTIVE EFFECTS
REPRODUCTIVE HEALTH
RESEARCH CONDUCT
RESONANCE EFFECTS
RESPIRATION
RESPIRATORY RATE
RESPIRATORY TETANUS
RESPONSE TO ELF FIELD
RESTLESSNESS
RIGHT OF WAY
RISK ASSESSMENT
RNA TRANSCRIPTION
ROOT GROWTH AND BENDING
SAFETY STANDARDS
SEAFARER CABLE CURRENT AND VOLTAGE
SEAFARER CABLE FAULT CONDITIONS (CABLE FAILURE)
SEEDLING GERMINATION AND MORTALITY
SENSITIVITY THRESHOLD
SENSITIVITY TO ELECTRIC FIELDS
SENSORY PHYSIOLOGY
SENSORY RESPONSES
SEROTONIN
SEROTONIN METABOLISM
SERUM CHEMISTRY
SERUM CORTICOSTEROID LEVEL
SERUM IMMUNOGLOBULIN LEVEL
SERUM TRIGLYCERIDES
SEX RATIO

SHOCK HAZARDS IN CHILDREN
SHORT CIRCUIT CURRENT TO GROUND
SICKLE CELL BLOOD
SIGNAL AVERAGING
SIGNAL TRANSDUCTION
SIGNAL-TO-NOISE RATIO
SISTER CHROMATID EXCHANGE
SKIN MOTILITY
SKIN SENSITIVITY
SKIN TUMOR
SKIN ULCERATION
SLEEP
SOCIAL BEHAVIOR
SOIL CONDUCTIVITY
SOIL DEHYDRATION
SOIL ORGANISMS
SOIL TEMPERATURE INCREASE
SPARK DISCHARGE
SPATIAL MEMORY
SPECIES COMPOSITION
SPECIES DENSITY
SPERM COUNT
SPERM MORPHOLOGY
SPERM VIABILITY
SPERMATOGENESIS
SPINAL CORD INJURY
SPLEEN
SPONTANEOUS ABORTION
SPONTANEOUS ACTIVITY
SPOT MEASUREMENTS
STATISTICAL ANALYSIS
STEP POTENTIALS
STEROID LEVEL
STEROID PRODUCTION AND RESPONSE
STINGING
STOMATAL RESISTANCE
STRAY VOLTAGE
STRESS
STRESS GENERATED POTENTIALS
STUDY DESIGN
SUICIDE
SURVIVABILITY
SURVIVAL FREQUENCY
SYNAPTIC TRANSMISSION
SYNERGISM
TAKE-OFF RATE

TELEPHONE USE
TEMPERATURE
TENDON INJURY HEALING
TERATOLOGY
TERRITORIALITY
TESTICULAR CANCER
TESTICULAR HISTOPATHOLOGY
TESTOSTERONE LEVEL
TETANIC RESPONSE
TETANIZATION
THEORETICAL STUDIES
THERAPEUTIC EFFECTS
THERMAL NOISE
THERMOREGULATION OF EXTREMITIES
THIOBARBITURIC ACID (TBA) REACTION
THRESHOLD LEVELS
THRESHOLD PERCEPTION
THYMIDINE KINASE
THYMUS
THYROID
TIREDNESS
TISSUE HEATING
TOMOGRAPHY
TORT CLAIMS
TOXICITY/ONCOGENICITY
TRAFFIC DENSITY
TRAFFIC RADAR
TRANSCRIPT LEVEL
TRANSIENT ION CONCENTRATION
TRANSIENTS/FIELD VARIABILITY
TRANSMEMBRANE POTENTIAL
TRANSPORTATION SYSTEMS
TRIGLYCERIDE LEVELS
TUMOR MARKERS
TUMOR SUPPRESSOR GENES
TUMOR THERAPY
TUMOR TREATMENT
TV TRANSMITTERS
UREA NITROGEN LEVEL
URINARY CORTICOSTEROID LEVEL
URINARY MELATONIN/METABOLITE
VACUOLAR DEGENERATION
VDT USE
VEGETATION
VIBRATION MEASUREMENTS
VIDEO DISPLAY TERMINALS (VDTs)

VIGILANCE
VIRAL REPLICATION
VOCALIZATION
WAVEFORM
WEAKNESS
WETLANDS
WIRING CODES
WIRING CONFIGURATION
WOUND HEALING

SECTION 4

CRITERIA FOR SCIENTIFIC MERIT

CRITERIA FOR SCIENTIFIC MERIT

- **Definition of problem to be investigated:**

The objective of a study must be defined clearly and rigorously.

- **Definition of environment:**

A given experimental or observational report should include all relevant environmental factors such as noise, temperature, vibration, light, electromagnetic fields, and chemical agents.

- **Experimental method and protocol:**

The experimental techniques used avoid or control factors such as noise, vibration, microshocks, and chemicals.

The effective ELF field, voltage, or current applied to the organism should be measured.

The experimental and observational techniques, methods, and conditions should be objective. Blind scoring should be used whenever there is a possibility of investigator bias. Likewise, data analysis should be objective.

A given experiment should be internally consistent with respect to the effects of interest. The results should be quantifiable and subject to confirmation by other investigators.

A given experiment should be supplemented by a protocol describing experimental setup, duration and level of field exposure, equipment used, and all particular features that could effect the experimental outcome. In addition, protocol should include complete information on object(s) under investigation such as age, sex, description of control sham-exposed groups, and other relevant data.

- **Sensitivity analysis:**

The sensitivity of the experiment should be adequate to ensure a reasonable probability that an effect would be detected if it existed.

When possible, threshold values should be estimated for field intensities and frequencies for which there are noticeable changes in bioeffects.

Maximally sensitive procedures should be employed whenever possible.

- **Statistical design and analysis:**

Proper statistical techniques should be used to establish the outcome.

- **Models employed:**

If models are used, it is necessary to assess the degree to which they simulate the geometrical and physical characteristics of the biological object.

Models should be appropriate to the experimental objectives and technique.

- **Result interpretation and assessment:**

Biological and engineering methodologies should be scientifically sound and appropriate for the experiment(s) or study.

The information reported should be adequate to permit judgments on the conclusions reached.

Data analysis techniques should be clearly described.

The conclusions drawn should not be of a speculative nature or extend beyond the limits of the available data.

SECTION 5

ELF BIOEFFECTS DATABASE

The ELF Bioeffects Database was developed to facilitate review of ELF Bioeffects literature data, the editing of existing records, and the addition of new records to the database. The database was constructed using Microsoft Access software and will run on any personal computer running the Microsoft Windows 95 (or later) operating system with Microsoft Access 97 (or later) installed. The main screen, shown in Figure 1, allows the user to search or edit data records, or to edit or print the various dictionaries of terms used in the database such as Issue Areas, Subject Categories, etc.

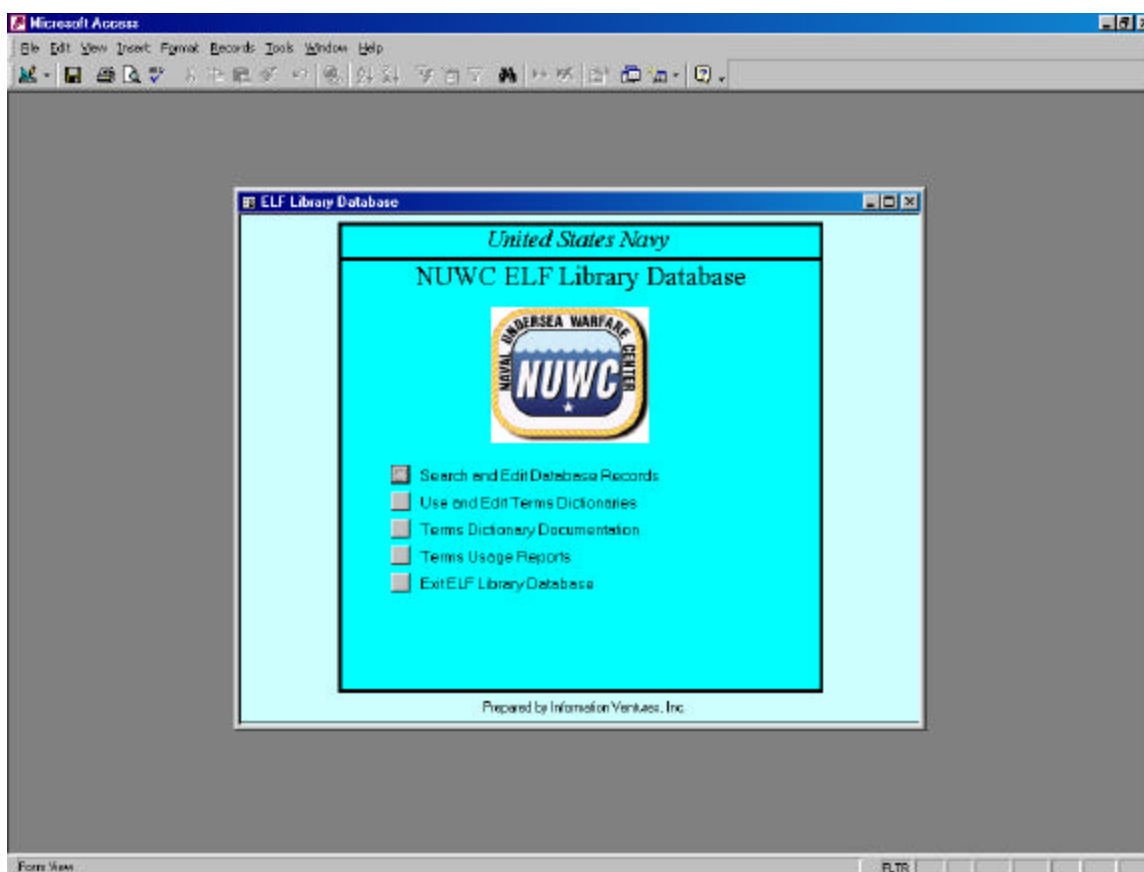


Figure 1

The search and edit database records data screen (form) displays the following information:

File Number
Date Added to Database
Record ID
Title
Author(s)

In addition, two tabs for Bibliographic Details and Categorization can be displayed. The Bibliographic Details tab contains the following information:

Sponsor
Publication
Publication Date
Number of Pages
Number of References
Language

In addition, the tab indicates whether a hardcopy of the literature is available in the ELF Bioeffects Library.

The Categorization tab contains the following information:

Field Type
Field Characteristics
Species
Issue Areas
Subject Materials
Subject Categories

Figures 2 and 3 show the search and edit database records data screen with each of the tabs selected.

Microsoft Access

File Edit View Insert Format Records Tools Window Help

File No. 99117 Citation needed ☒ Categorized ☒ Uncategorized Only Date added 03/09/2006 RecID 4812

Title NUMERICAL EVALUATION OF 60 Hz MAGNETIC INDUCTION IN THE HUMAN BODY IN COMPLEX OCCUPATIONAL ENVIRONMENTS

Author Dawson, T. W.; Caputo, K.; Stuchly, M. A.

Bibliographic details Categorization

Sponsor Dept. of Electrical and Computer Engineering, Univ. of Victoria, P.O. Box 3055, STN CSC, Victoria, British Columbia V8W 3P6, Canada, e-mail: tdawson@ece.uvic.ca (RR/T.W.D.)

Publication Phys Med Biol 44(4):1025-1040, 1999

Pub Date 04/01/1999 Num Pages 16 Report No.

Work Ref: 13 Language Eng Med Copy Available ☒

Record 3902 of 4416

Form View

Figure 2

Microsoft Access

File Edit View Insert Format Records Tools Window Help

File No: 99117 Citation needed: ☒ Categorized: ☒ Uncategorized Only: ☐ Date added: 03/09/2006 RecID: 4812

Title: NUMERICAL EVALUATION OF 60 HZ MAGNETIC INDUCTION IN THE HUMAN BODY IN COMPLEX OCCUPATIONAL ENVIRONMENTS

Author: Dawson, T. W.; Caputo, K.; Stuchly, M. A.

Bibliographic details Categorization

Field Type: Magnetic field

Field Class: Power line frequency; ELF, 60 Hz

Species: Humans (model)

Issue Areas: Chronic exposure; Occupational exposure; Exposure dosimetry; Magnetic field hazard; Modeling; Theoretical studies; Electrical workers; Induced electric fields

Subject Matter: Electric and magnetic field dosimetry; Human health; Field levels; Dosimetry

Subject Categ.: Human exposure; Occupational field exposure; Theoretical studies; Theoretical and experimental modeling; Organ dosimetry

Record: 3902 of 4416

Form View

Figure 3

SECTION 6

ELF BIOEFFECTS LIBRARY AND LITERATURE EVALUATION AND ASSESSMENT STATISTICS

ELF Bioeffects Library Statistics as of 31 December 2002

Number of ELF Bioeffects Database Entries	6040
Number of Hardcopy Items in the ELF Bioeffects Library	3972

ELF Bioeffects Literature Evaluation and Assessment Statistics January 1999 through December 2002

Quarter	No. of Reviews Conducted (SOW Para 4.2.3)	No. of Citations Reviewed by New Literature Evaluators (SOW Para 4.2.4)
1999 1 st Qtr	90	0
1999 2 nd Qtr	276	2
1999 3 rd Qtr	76	2
1999 4 th Qtr	68	7
2000 1 st Qtr	62	1
2000 2 nd Qtr	62	3
2000 3 rd Qtr	187	1
2000 4 th Qtr	87	5
2001 1 st Qtr	88	0
2001 2 nd Qtr	94	0
2001 3 rd Qtr	183	1
2001 4 th Qtr	150	0
2002 1 st Qtr	240	0
2002 2 nd Qtr	153	3
2002 3 rd Qtr	164	0
2002 4 th Qtr	80	0

PERSONNEL QUALIFICATIONS SHEET

Requisition No. N

Solicitation No. N66604-

Title	Level	Key	Non-Key
ELF Bioeffects Literature Evaluator(s)	III	X	

Education and Professional Experience:

Ph.D. degree in physical or biological science, applied science, or engineering, or Doctor of Medicine with a total of 2 years of cumulative specialized experience in electromagnetics and biological science as related to the biological effects of electromagnetic radiation.

OR

An advanced degree equivalent to the above listed Ph.D. or M.D. degrees listed with a total of 3 years of cumulative specialized experience in electromagnetics and biological science as related to the biological effects of electromagnetic radiation.

OR

Master of Science degree in physical or biological science, applied science, or engineering with a total of 10 years of cumulative specialized experience in electromagnetics and biological science as related to the biological effects of electromagnetic radiation.

Offeror is to complete information below:

Name	Hours	Company and Location

TOTAL MAN-HOURS:

PERSONNEL QUALIFICATIONS SHEET

Requisition No. N

Solicitation No. N66604-

Title	Level	Key	Non-Key
ELF Bioeffects New Literature Evaluator(s)	III	X	

Education and Professional Experience:

Ph.D. degree in physical or biological science, applied science, or engineering, or Doctor of Medicine, or equivalent with a total of 10 years of cumulative specialized experience in electromagnetics and biological science as related to the biological effects of electromagnetic radiation. Recognized expert in the subject areas listed in the "Issue Areas" list, attached to the RFP.

(A New Literature Evaluator may be qualified to address more than one "Issue Area". "Issue Area" expertise for each New Literature Evaluator must be identified. All "Issue Areas" must be covered by one or more New Literature Evaluator(s).)

Offeror is to complete information below:

Name	Hours	Company and Location

TOTAL MAN-HOURS:

JA8 PERSONNEL DATA FORM

NAME _____

PRESENT EMPLOYER _____ LOCATION _____

LABOR CATEGORY _____ YEARS PERTINENT EXPERIENCE _____

EDUCATION _____

Degree

Subject

Year

School

SECURITY CLEARANCE _____ TRAINING _____

EXPERIENCE ELEMENT: _____

TIME PERIOD: _____ OCCASION: _____

NARRATIVE: _____

EXPERIENCE ELEMENT: _____

TIME PERIOD: _____ OCCASION: _____

NARRATIVE: _____

EXPERIENCE ELEMENT: _____

TIME PERIOD: _____ OCCASION: _____

NARRATIVE: _____

(Continue as necessary.)

GOVERNMENT PROPERTY MADE AVAILABLE

(a) The following are located at a NUWC facility or other Government Site as may be noted herein. Unless specified otherwise, access is on a non-interference and rent-free basis as scheduled with the COTR.

(1) LABORATORY FACILITIES	None
(2) LABORATORY EQUIPMENT	None
(3) OFFICE FACILITIES	None
(4) OFFICE EQUIPMENT	None
(5) COMPUTER FACILITIES	None
(6) COMPUTER EQUIPMENT	None
(7) SOFTWARE	None
(8) OTHER	None

(b) The following GFP will be provided for contractor possession (use, not title):

<u>GFP Item</u>					
<u>No.</u>	<u>Type</u>	<u>Description</u>	<u>Quantity</u>	<u>Acq. Cost (ea.)</u>	<u>Time</u>
1		ELF Bioeffects Library	1	\$100,000	Contract Period
2		ELF Bioeffects Library Database	1	\$20,000	Contract Period

(c) The following GFM will be provided for incorporation into end products:

<u>GFP Item</u>					
<u>No.</u>	<u>Type</u>	<u>Description</u>	<u>Quantity</u>	<u>Acq. Cost (ea.)</u>	<u>Time</u>

**Incentive Plan
For
ELF Communications Program
Non-ionizing Electromagnetic Radiation
Literature Evaluation and Assessment
Solicitation N66604-03-R-0049**

- 1.0 Introduction: This incentive plan provides the basis for evaluation of the contractor's overall performance under a contract resulting from Solicitation N66604-03-R-0049 and for determining if the contract anticipated period of performance should be reduced.

From its inception the Extremely Low Frequency (ELF) communications program has had to consider the potential environmental aspects associated with the technology. To address these environmental concerns the ELF program has conducted an ongoing evaluation and assessment of scientific literature in the field of non-ionizing electromagnetic radiation. The requirements of this solicitation continue that effort. Due to the scientific nature of the requirements, the vital nature of the ELF system to US Navy operations and the historic political sensitivity of the technology, the desired level of performance on this contract is "Excellent". In the event the contractor's performance is rated less than "Very Good" the Government may reduce the anticipated period of performance.

- 2.0 Performance Ratings: Overall performance will be evaluated and assigned one of the following ratings:

- Excellent
- Very Good
- Satisfactory
- Unsatisfactory

The standards associated with these ratings are given in Annex 1.

- 3.0 Incentive: The incentive is a "Negative Term Incentive." The contract will last up to five (5) years if performance is rated "Very Good" or higher, subject to the continuing need for the services, the availability of funding, and a determination that exercising the option(s) is the most advantageous means of fulfilling the Government's needs. For any one year in which performance is rated less than Very Good the period of performance of this contract may be reduced by one year. For example, if performance in year one is rated less than Very Good the contract period of performance could be reduced from 5 to 4 years. If performance in both years one and two is less than Very Good the contract period of performance could be reduced to 3 years. Likewise, regardless of the performance ratings in any previous one year performance period(s) of this

contract, any subsequent one year performance period receiving a less than Very Good rating could result in a one year reduction.

- 4.0 Incentive Objectives: The negative term incentive has been included in this contract in order to promote excellent performance in the following areas:
- ELF Bioeffects Literature Search
 - ELF Bioeffects Literature Evaluation and Assessment
- 5.0 Performance Evaluation Criteria: To determine the degree to which the contractor has met the objectives, the contractor's performance will be evaluated using criteria and standards provided for each objective and identified in Annex 2.
- 6.0 Organization. The performance evaluation organization consists of the Procuring Contracting Officer (PCO), who will serve as the Incentive Determining Official (IDO), and the Performance Evaluation Board (PEB).
- (a) Procuring Contracting Officer (PCO)/Incentive Determining Official (IDO): The PCO is responsible for properly administering the performance evaluation process and maintaining the official performance evaluation file and as IDO is responsible for making incentive determinations.
- (b) Performance Evaluation Board (PEB): The PEB is responsible for reviewing contractor performance and making recommendations to the IDO concerning evaluation ratings. PEB members will be selected by the IDO and will generally consist of the following individuals:
- Chairperson
 - COR (may be the Chairperson as well)
 - Contracting Office representative (usually the Contract Negotiator)
 - Technical Program Manager (may be the Chairperson as well)

Chairperson: The Chairperson is responsible for obtaining the information needed to evaluate contractor performance. The Chairperson is responsible for conducting the PEB meetings, and for properly evaluating and documenting contractor performance during the evaluation period. Additionally, the Chairperson is responsible for submitting the PEB Evaluation Report to the IDO.

COR The COR coordinates the performance monitoring efforts of the PCOs and maintains the written records of the contractor's performance so that a fair and accurate evaluation is obtained. The COR coordinates and compiles interim and final evaluation reports in conjunction with the ATRB.

Contracting Office representative (Contract Negotiator):The Contracting Office representative (Contract Negotiator) is the liaison between contractor and Government personnel for contractual matters. The Contract Negotiator serves as the PEB Recorder and provides additional support to the PEB as requested by the Chairperson.

Technical Program Manager: In conjunction with the COR, provides ongoing performance monitoring, evaluates task performance based on the PRS, SOW attachment (1a), and Assists the COITDO and PEB in preparation of interim and end of period evaluation reports.

- 7.0 Evaluation Schedule: Each performance evaluation period will be 12 months in length and will be divided into 4 three-month interim evaluation periods. Following each interim evaluation period, the PCO/IDO (or Contract Negotiator if so designated by the PCO) and the COR will hold a meeting with the STR to review performance including overall trends, specific problem areas, if any, and their resolution. Other government and contractor personnel may also participate as deemed appropriate by the PCO (or Contract Negotiator).
- 8.0 Contractor's Self-Evaluation: The contractor may submit a self-evaluation for consideration during the incentive determination process. To be considered, the report must be submitted to the PCO within fourteen (14) working days after the end of an evaluation period. The report must include an overall performance rating and may include whatever information the contractor deems relevant to support that rating. The report shall not exceed two (2) pages in length.
- 9.0 Incentive Determination: The IDO will make an incentive determination at the end of each evaluation period. The determination will be based upon the Performance Evaluation Board's recommendation, the Contractor's Self-Evaluation and any other information deemed relevant by the IDO. The IDO's decision is unilateral and final.

Annex 1 Overall Performance Ratings and Standards

Overall Performance Rating	Standard
Excellent	“Excellent” ratings for all performance evaluation criteria.
Very Good	A combination of “Excellent” and “Satisfactory” ratings determined by the TDO to exceed “Satisfactory” overall.
Satisfactory	A minimum of “Satisfactory” ratings for all performance evaluation criteria.
Unsatisfactory	A rating of “Unsatisfactory” for one or more performance evaluation criteria.

Annex 1 Performance Evaluation Criteria and Standards

Criterion	UNSATISFACTORY	SATISFACTORY	EXCELLENT
Staffing	Contractor provides marginally qualified or unqualified personnel.	Contractor provides qualified personnel.	Contractor provides highly qualified personnel.
Task Performance	Work product fails to meet Acceptable Quality Levels (AQLs) defined in Performance requirements Summary Table, Attachment (1a) to the SOW.	Work product routinely meets Acceptable Quality Levels (AQLs) defined in Performance Requirements Summary Table, Attachment (1a) to the SOW.	Work product frequently exceeds Acceptable Quality Levels (AQLs) defined in Performance requirements Summary Table, Attachment (1a) to the SOW.
Problem Resolution	Problem(s) was/were never resolved or took repeated government efforts to resolve.	Problem(s) was/were resolved quickly with minimal government involvement.	Either no problem(s) occurred or the contractor took corrective action without government involvement.
Timeliness	Contractor frequently misses deadlines, schedules, or is slow to respond to government requests or is non-responsive to government requests.	Contractor routinely meets deadlines, schedules, and responds quickly to government requests.	Contractor always meets deadlines, schedules, and responds immediately to government requests.
Customer Satisfaction	Fails to meet customer expectations	Meets customer expectations.	Exceeds customer expectations.